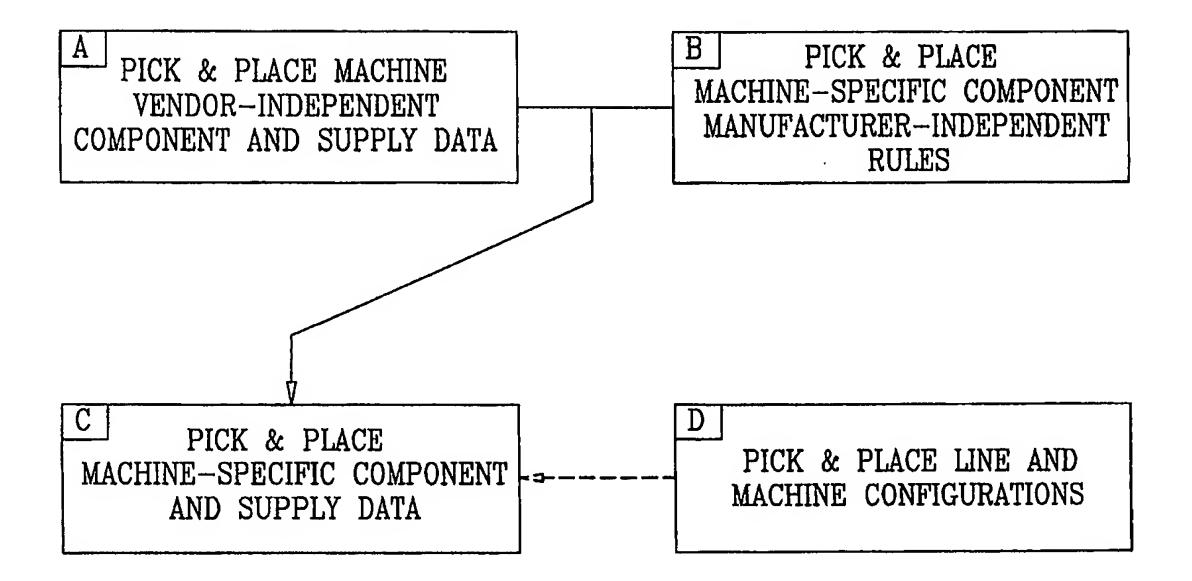
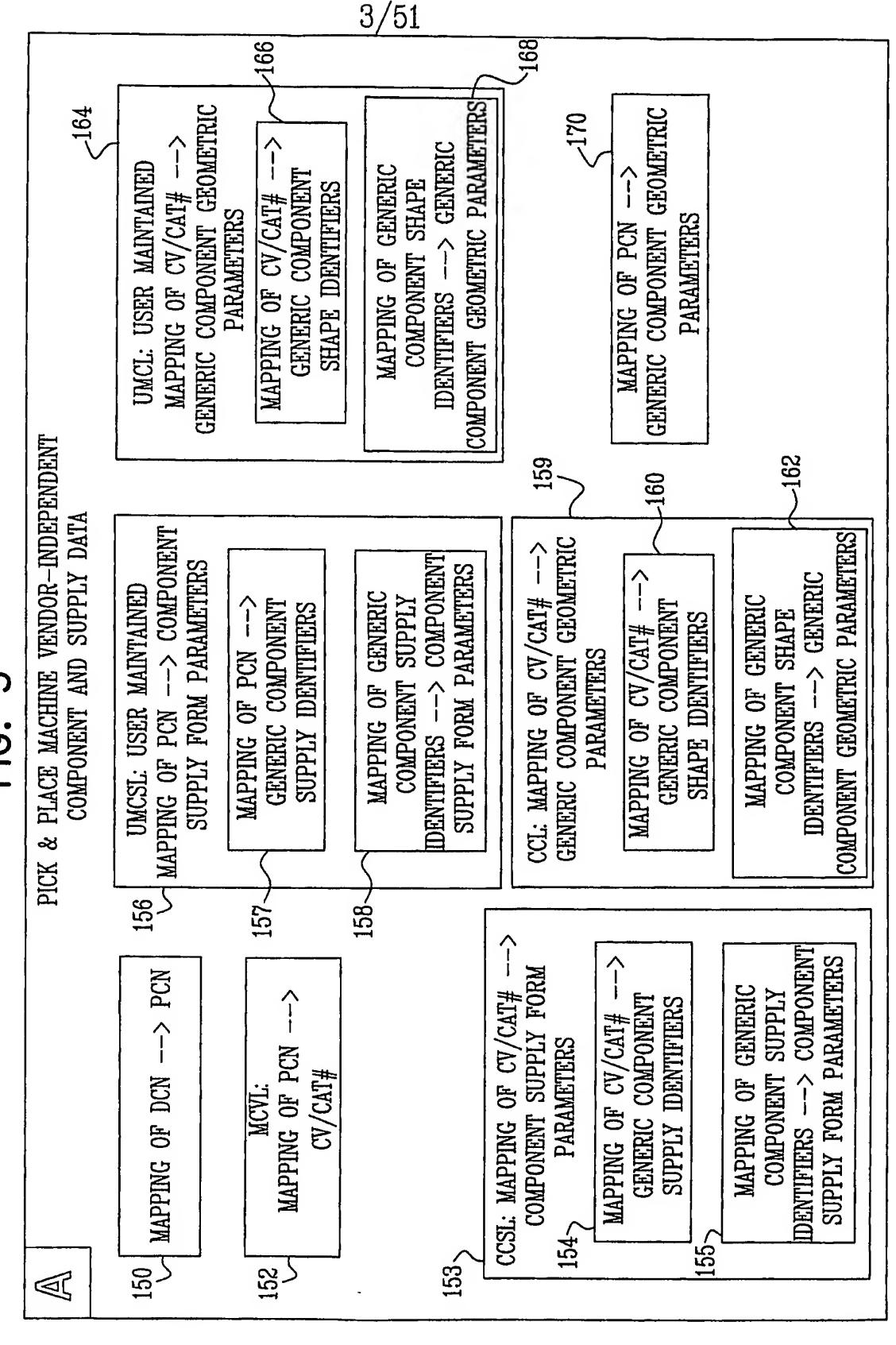


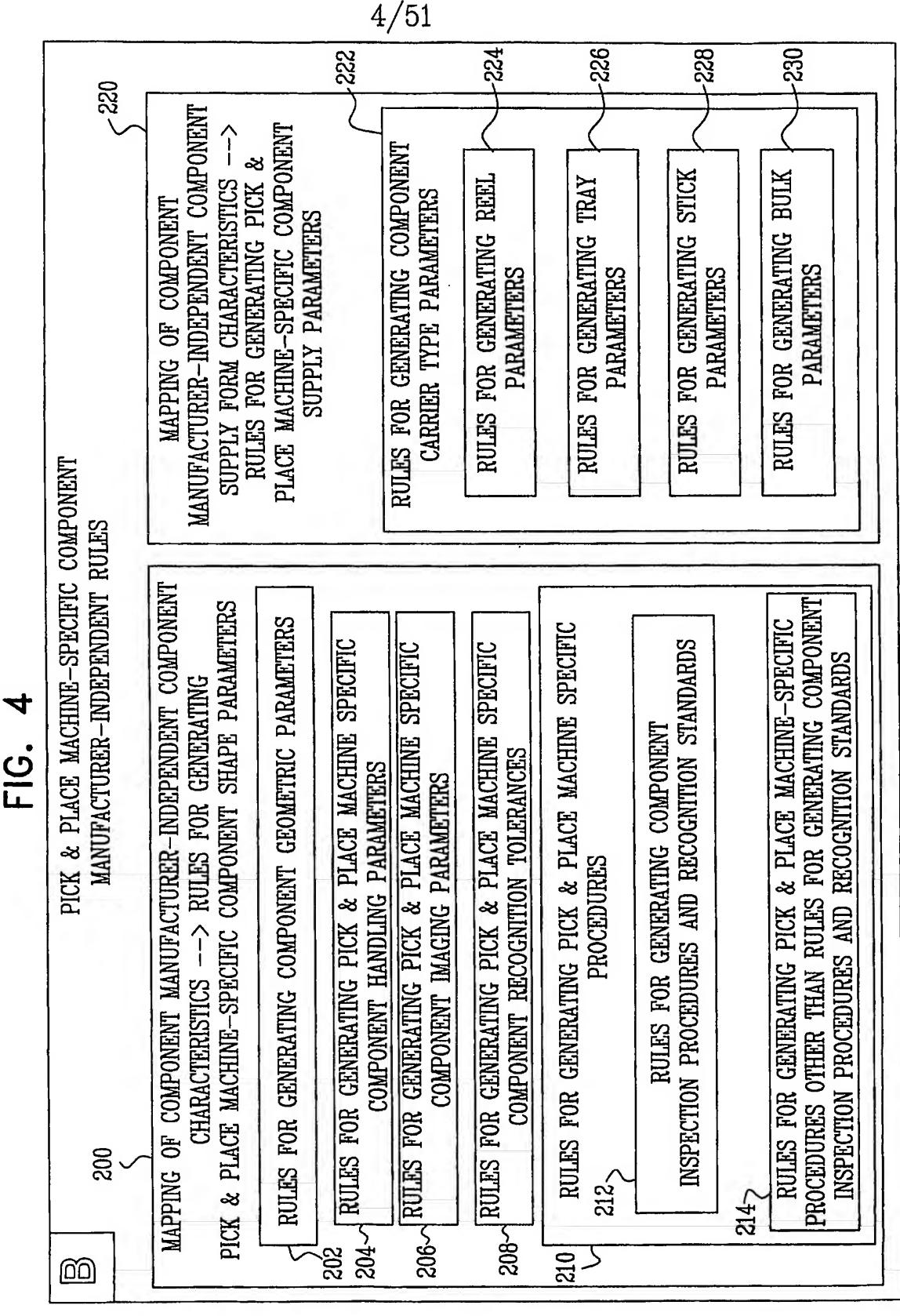
FIG. 2







()



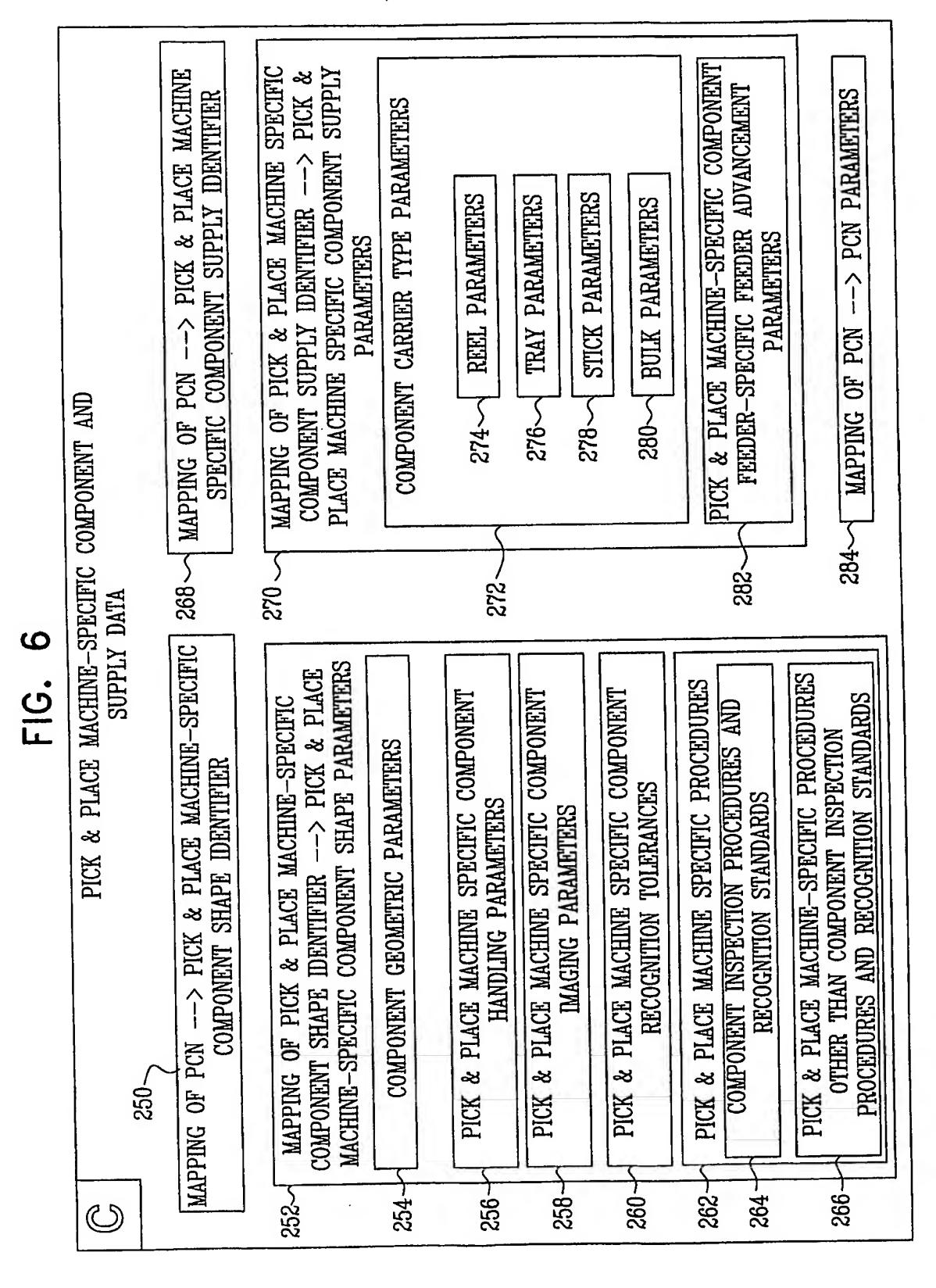
5/51

1		232	234		
FIG. 5A	RULES FOR GENERATING PICK & PLACE MACHINE SPECIFIC COMPONENT REEL PARAMETER	=(REEL PITCH/MACHINE FEED DISTANCE)	{IF (REEL PITCH - ((REEL PITCH/MACHINE FEED DISTANCE)) > 0} THEN = (REEL PITCH - ((REEL PITCH/MACHINE FEED DISTANCE)*MACHINE FEED DISTANCE)*MACHINE FEED DISTANCE) ELSE NOT RELEVANT		IF {(TAPE WIDTH - ((TAPE WIDTH/SLOT WIDTH) == 0} THEN =(TAPE WIDTH/SLOT WIDTH) ELSE =((TAPE WIDTH/SLOT WIDTH/SLOT WIDTH/SLOT)
	PICK & PLACE MACHINE SPECIFIC COMPONENT REEL PARAMETER	MACHINE FEED	MACHINE SUB-FEED	• • •	NUMBER OF SLOTS

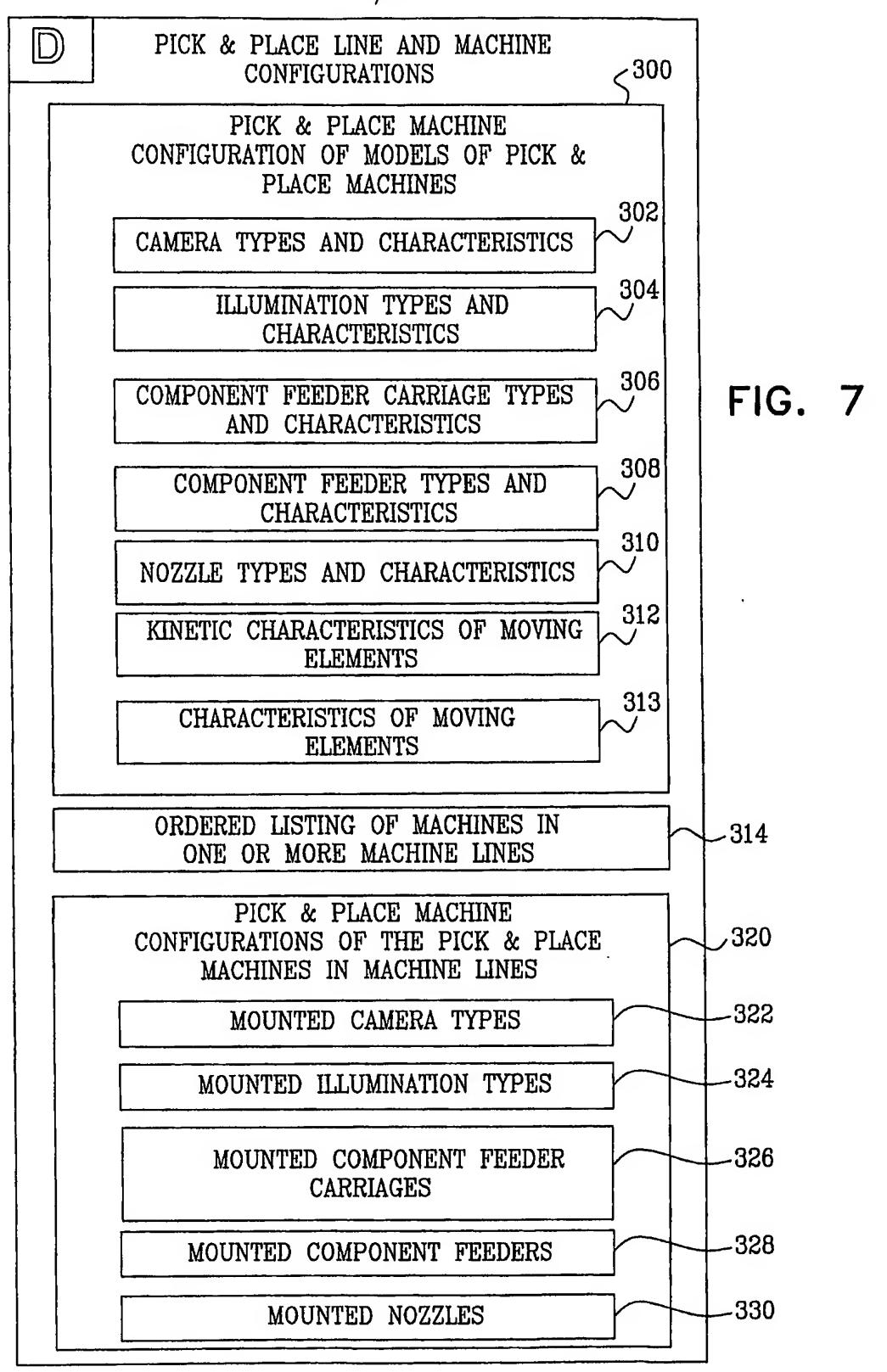
FIG. 5B

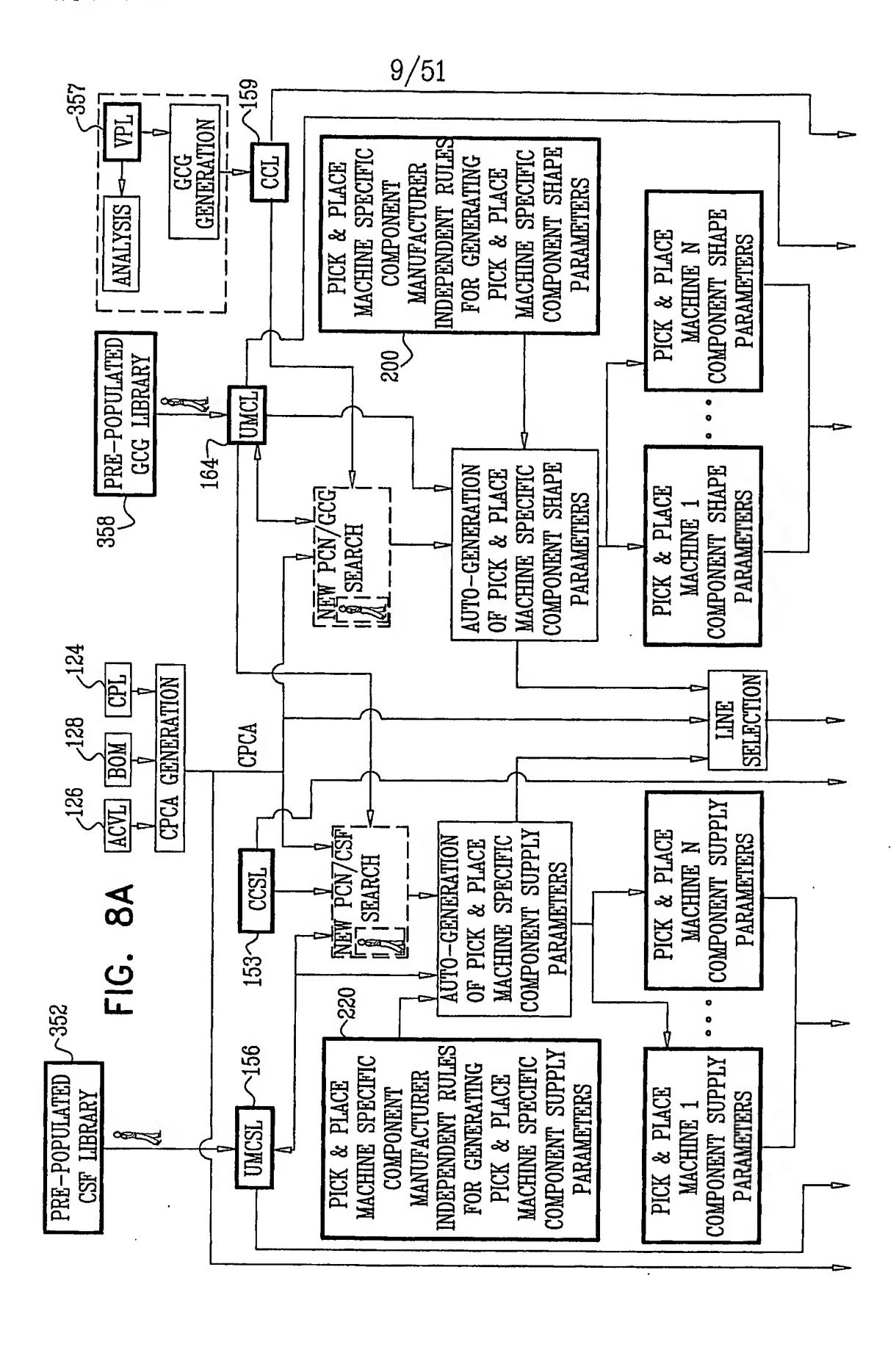
			6	3/51	2 4 4			
	CONNECTORS	=COMPONENT HEIGHT		IF {(MAX(X DIMENSION, Y DIMENSION)/MIN(X DIMENSION, Y DIMENSION)>=8 THEN ="LARGEST NOZZLE" ELSEIF {(MAX(X DIMENSION, Y	DIMENSION)/MIN(X DIMENSION, Y DIMENSION))<2	IF {(MAX(X DIMENSION, Y DIMENSION)/MIN(X DIMENSION, Y DIMENSION) +2 THEN = MIN(X DIMENSION, Y DIMENSION) +0.7 ELSE NOT RELEVANT	IF {(MAX(X DIMENSION, Y DIMENSION)/MIN(X DIMENSION, Y DIMENSION) <2} THEN =MIN(X DIMENSION, Y DIMENSION)*0.95 ELSE NOT RELEVANT	
	QFP	=COMPONENT HEIGHT	• • •	NOT RELEVANT		=MIN(X DIMENSION, Y DIMENSION)*0.7	DIMENSION, Y DIMENSION, Y DIMENSION) *0.95 DIMENSION) *0.95	970
	BGA	=COMPONENT HEIGHT	000	NOT RELEVANT		=MIN(X DIMENSION, Y DIMENSION)*0.7	=MAX(X DIMENSION, Y DIMENSION)*0.95	
	MANUFACTURER—INDEPENDENT PICK & PLACE COMPONENT CHARACTERISTIC COMPONENT SPECIFIC (COMPONENT TYPE) PARAMETER	PICKUP DEPTH		NAMED NOZZLE		MINIMUM NOZZIÆ	MAXIMUM NOZZLE	

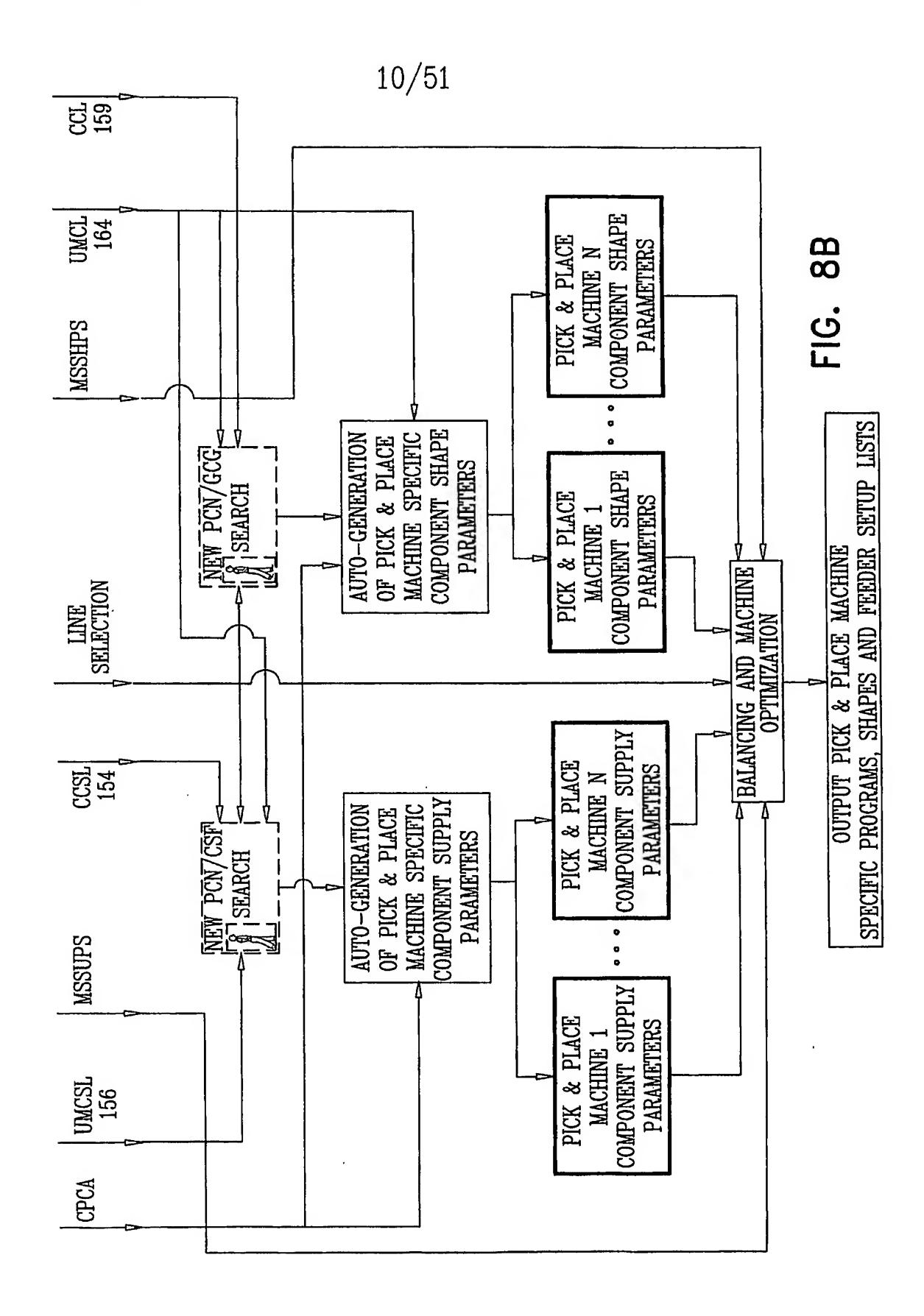
7/51



8/51







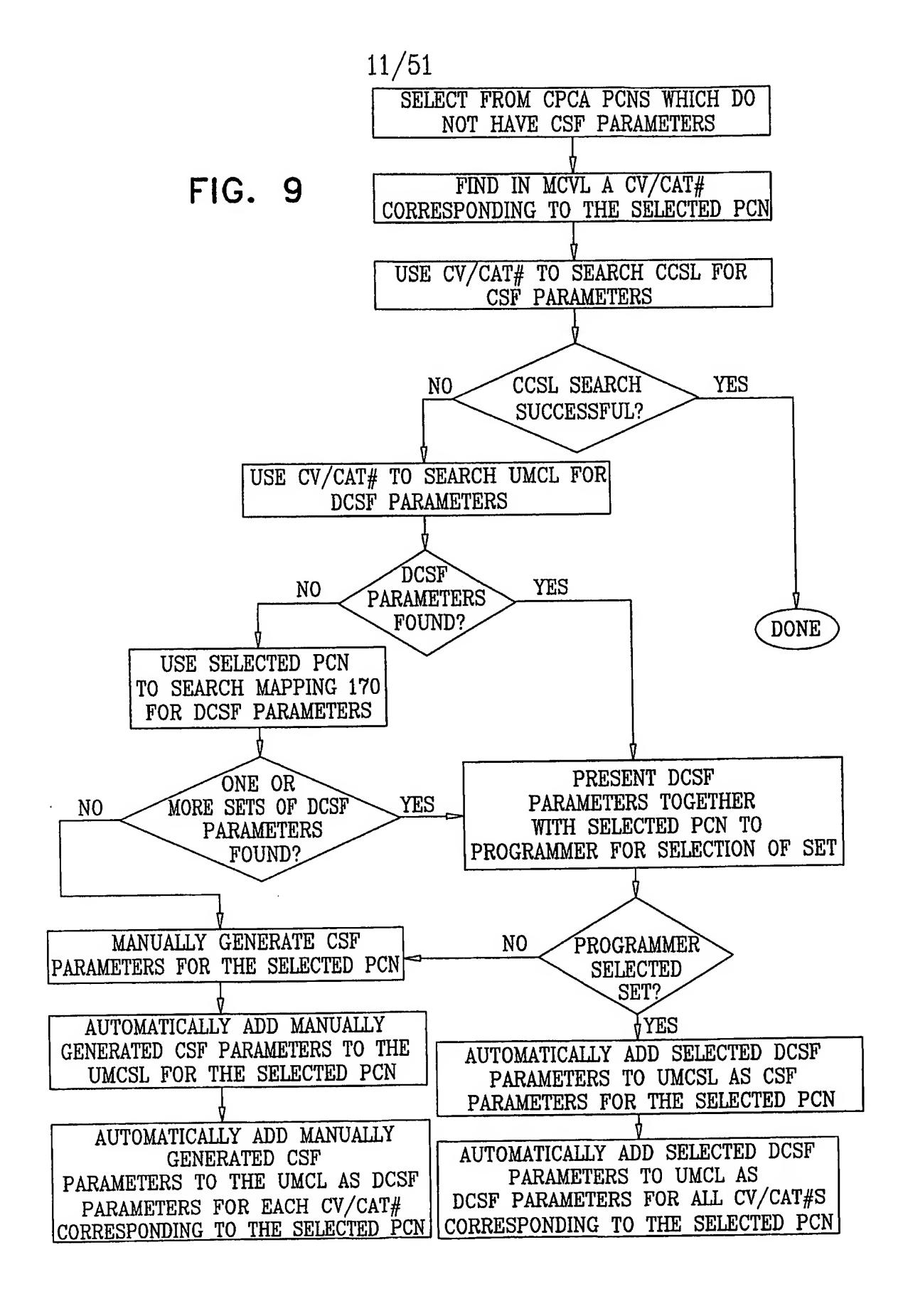


FIG. 10

SELECT FROM CPCA DATA
PCNS WHICH DO NOT HAVE
PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SUPPLY
IDENTIFIERS AND/OR MSSUPS

EMPLOY GENERIC
COMPONENT SUPPLY
IDENTIFIERS IN SECOND STAGE
MAPPING 158 TO OBTAIN CSF
PARAMETERS FOR THE
SELECTED PCN

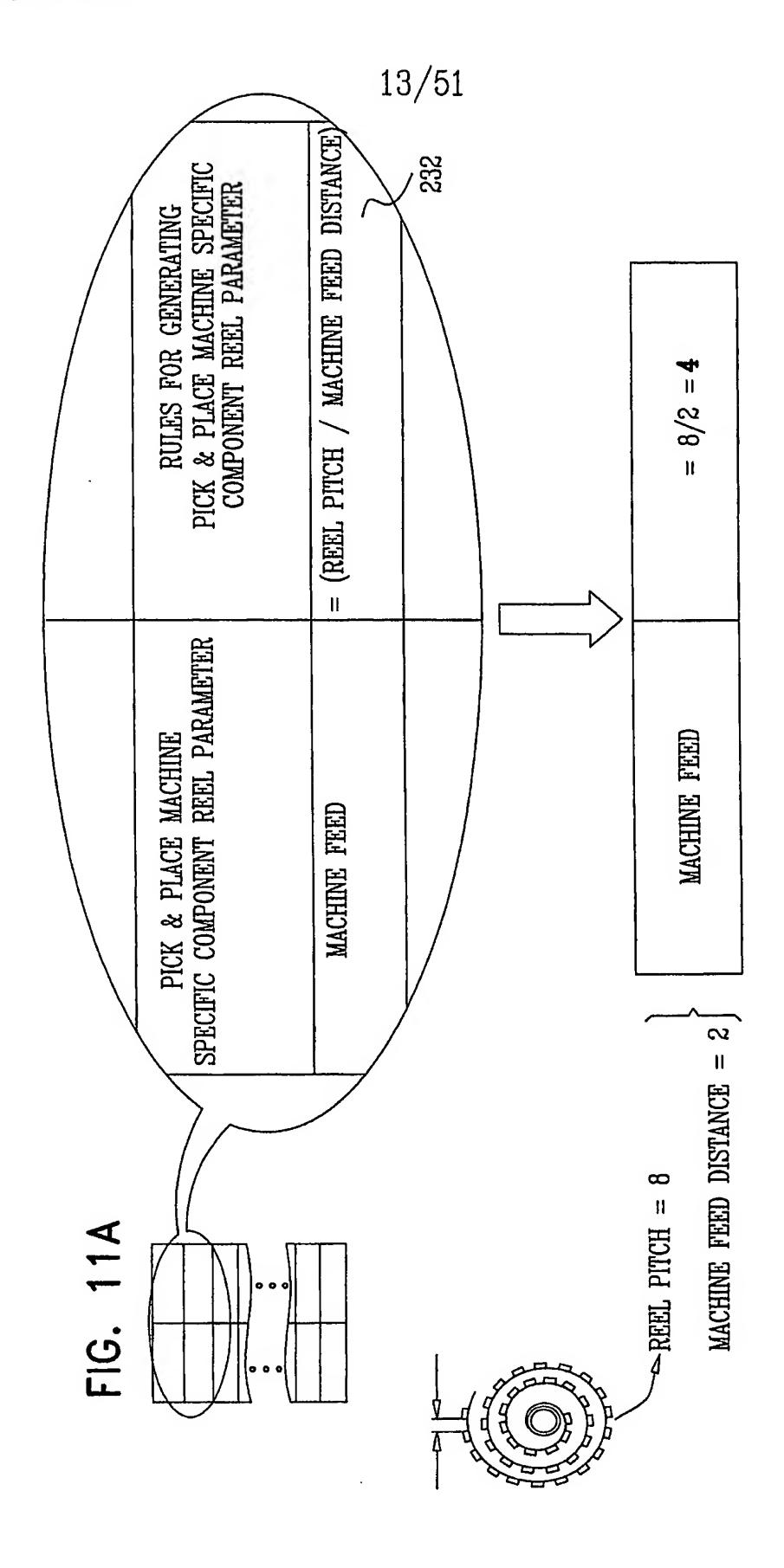
EMPLOY CSF PARAMETERS
TO GENERATE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SUPPLY
IDENTIFIER FOR THE
SELECTED PCN

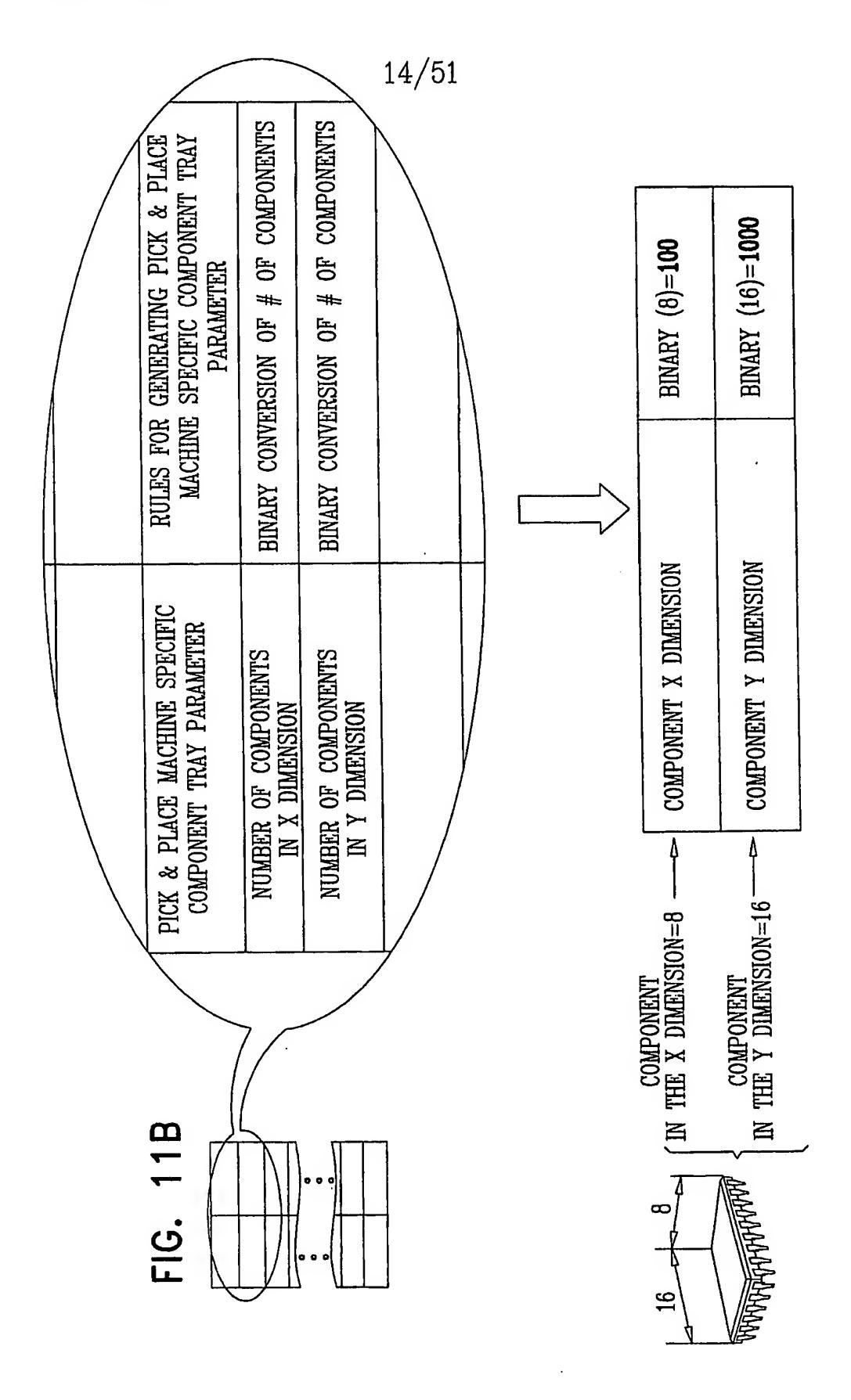
EMPLOY CSF PARAMETERS
TO OBTAIN CARRIER TYPE FOR
THE SELECTED PCN

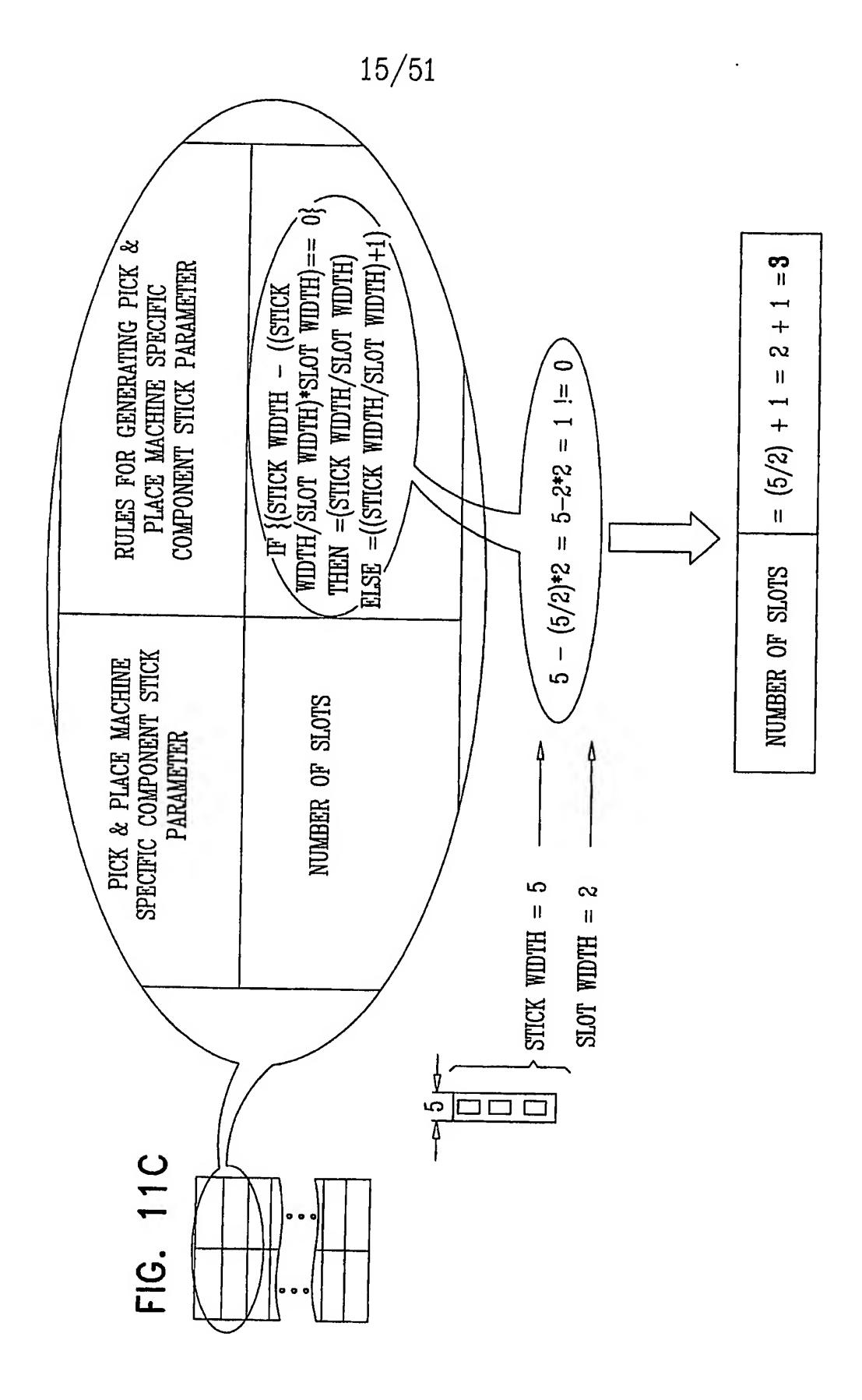
EMPLOY CARRIER TYPE
AND MACHINE IDENTIFICATION
TO ACCESS APPROPRIATE
RULE SET

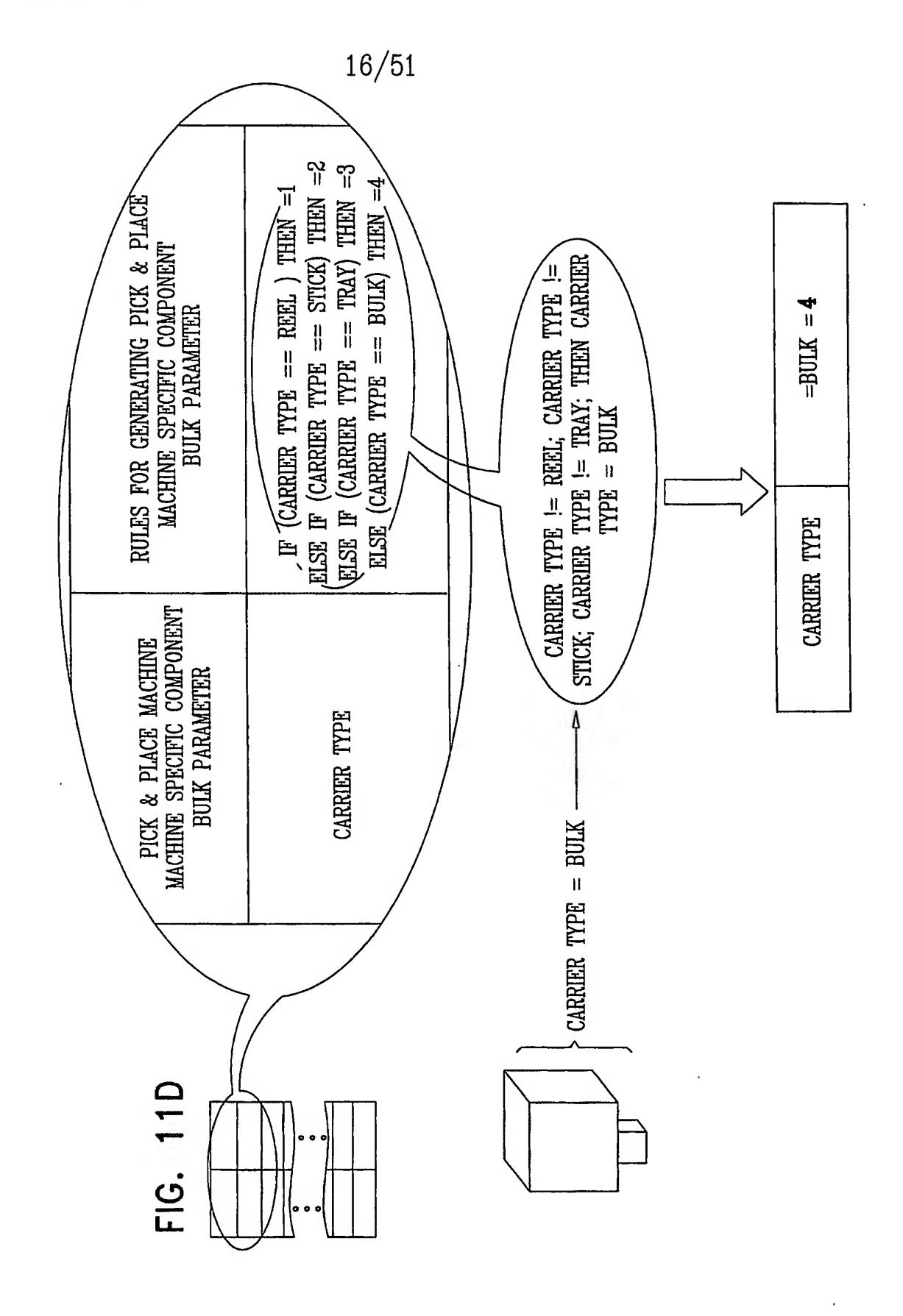
OPERATE EACH RULE IN
THE RULE SET BASED ON CSF
PARAMETERS TO YIELD A
VALUE

ASSIGN THE VALUE TO THE CORRESPONDING MSSUP









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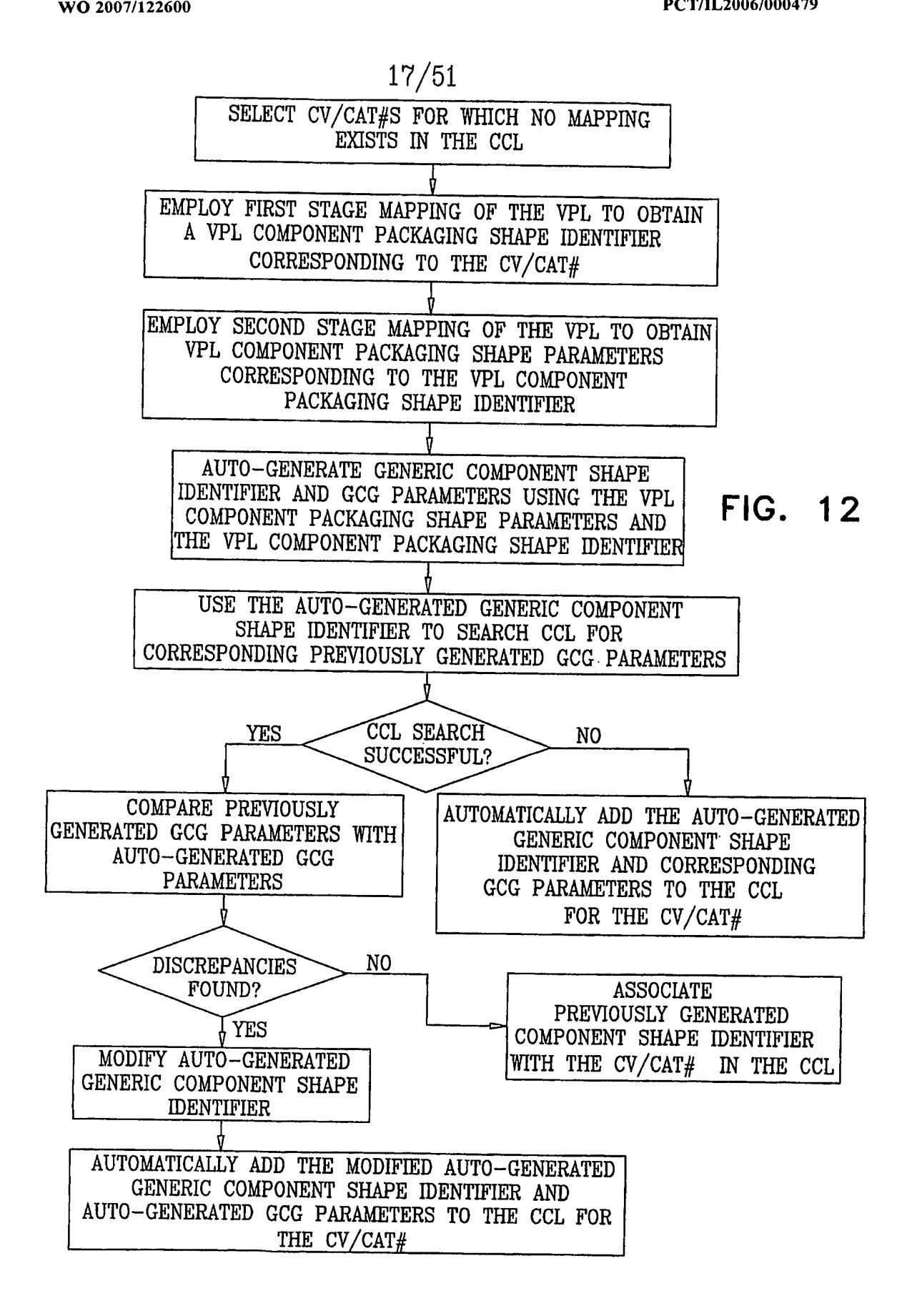
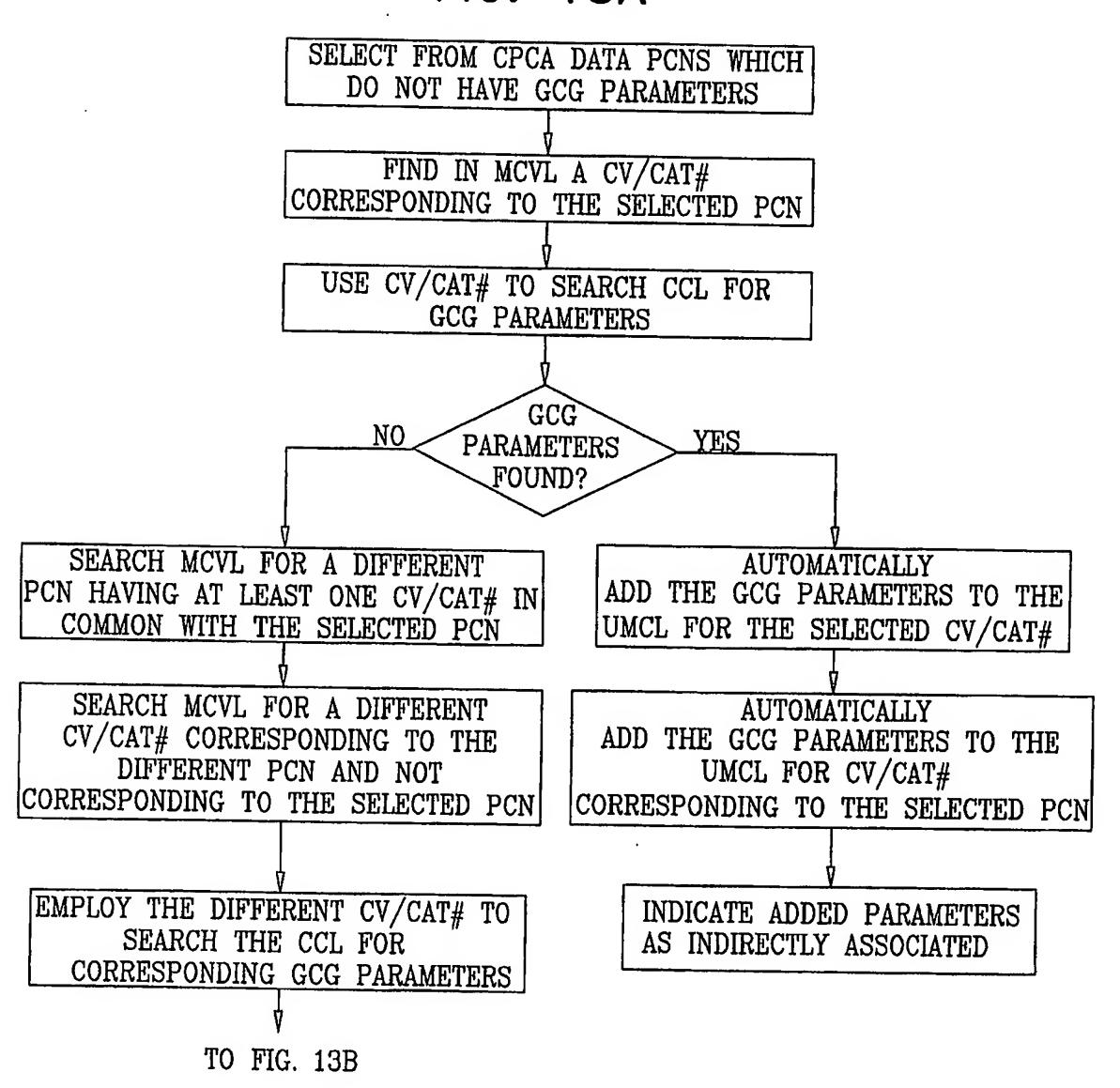


FIG. 13A



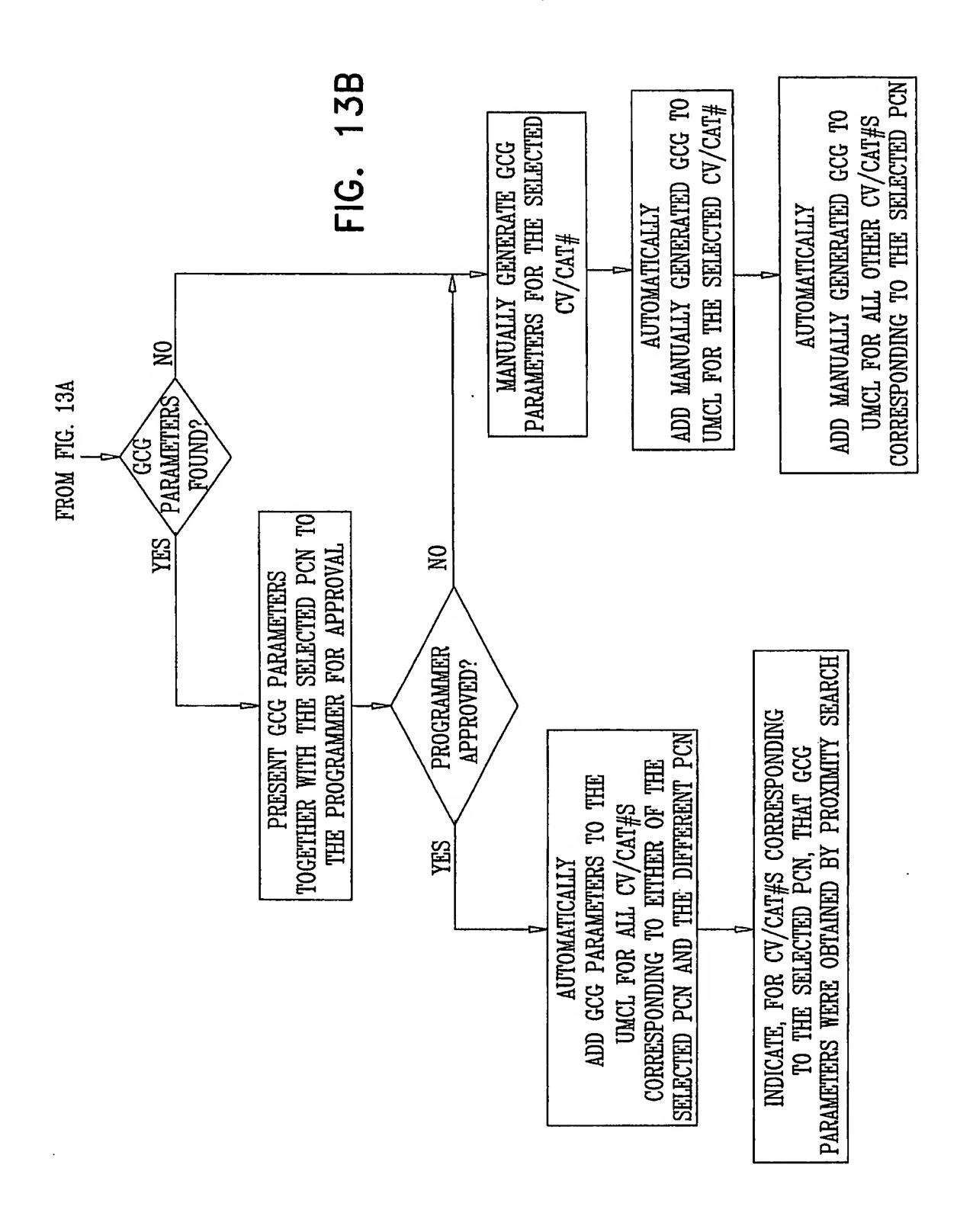


FIG. 14

SELECT FROM CPCA DATA
PCNS WHICH DO NOT HAVE
PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SHAPE
IDENTIFIERS AND/OR MSSHPS

EMPLOY GENERIC
COMPONENT SHAPE
IDENTIFIERS IN SECOND STAGE
MAPPING 168 TO OBTAIN GCG
PARAMETERS FOR THE
SELECTED PCN

EMPLOY GCG PARAMETERS
TO GENERATE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SHAPE IDENTIFIER
FOR THE SELECTED PCN

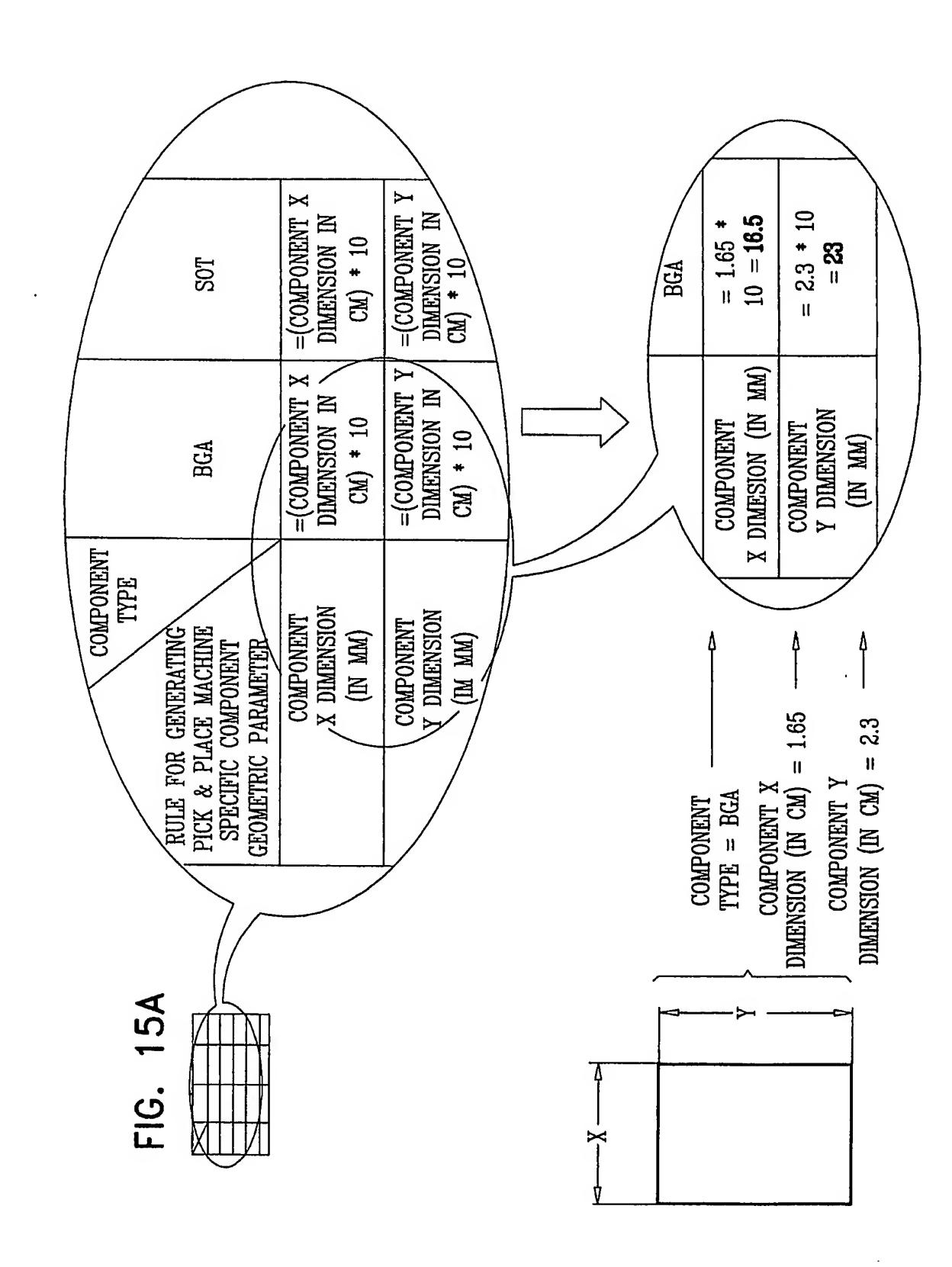
EMPLOY GCG PARAMETERS
TO OBTAIN COMPONENT TYPE
FOR THE SELECTED PCN

EMPLOY COMPONENT TYPE
AND MACHINE IDENTIFICATION
TO ACCESS APPROPRIATE
RULE SET

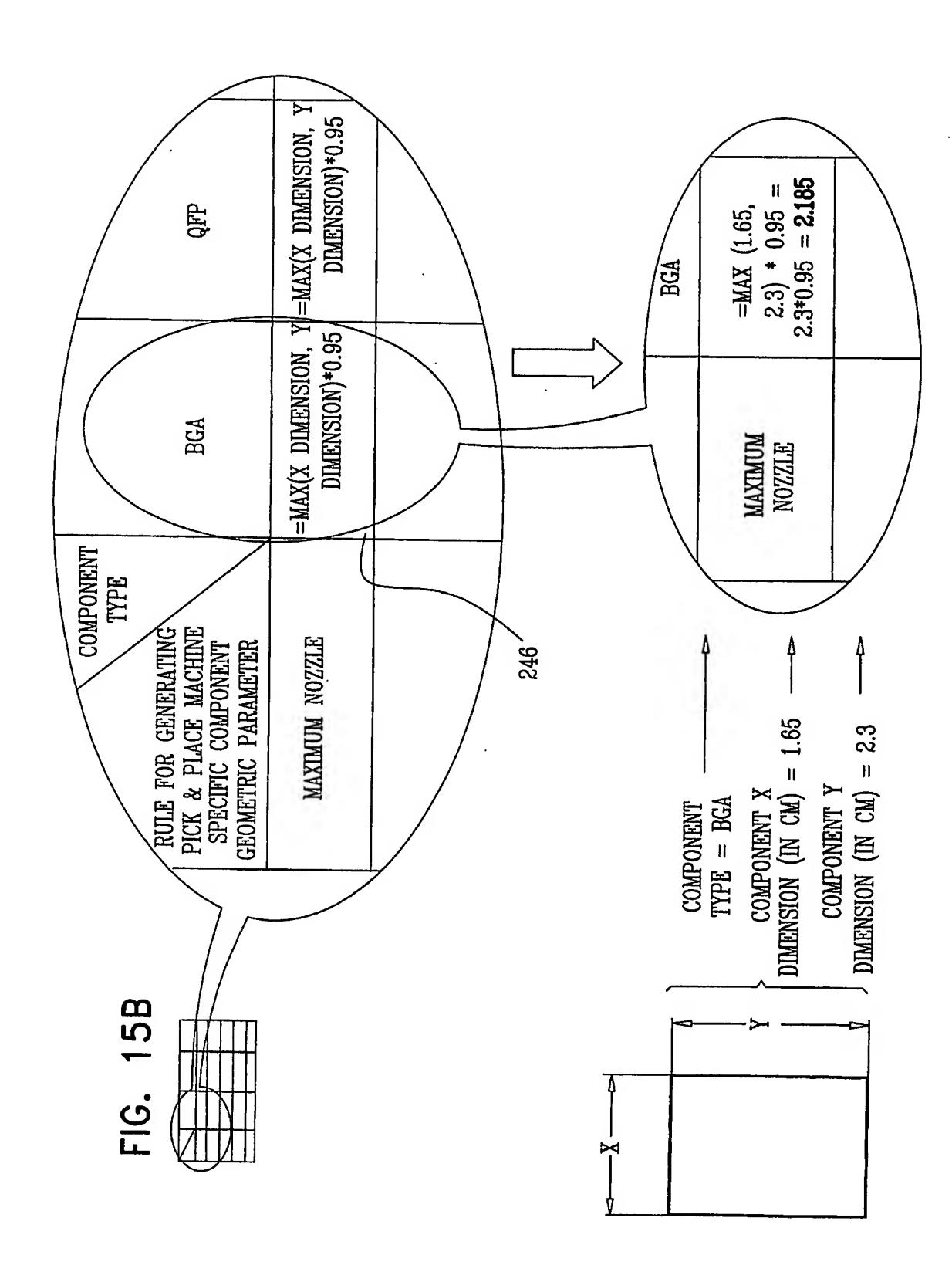
OPERATE EACH RELEVANT
RULE IN THE RULE SET
BASED ON GCG PARAMETERS
TO YIELD A VALUE

ASSIGN THE VALUE TO THE CORRESPONDING MSSHP

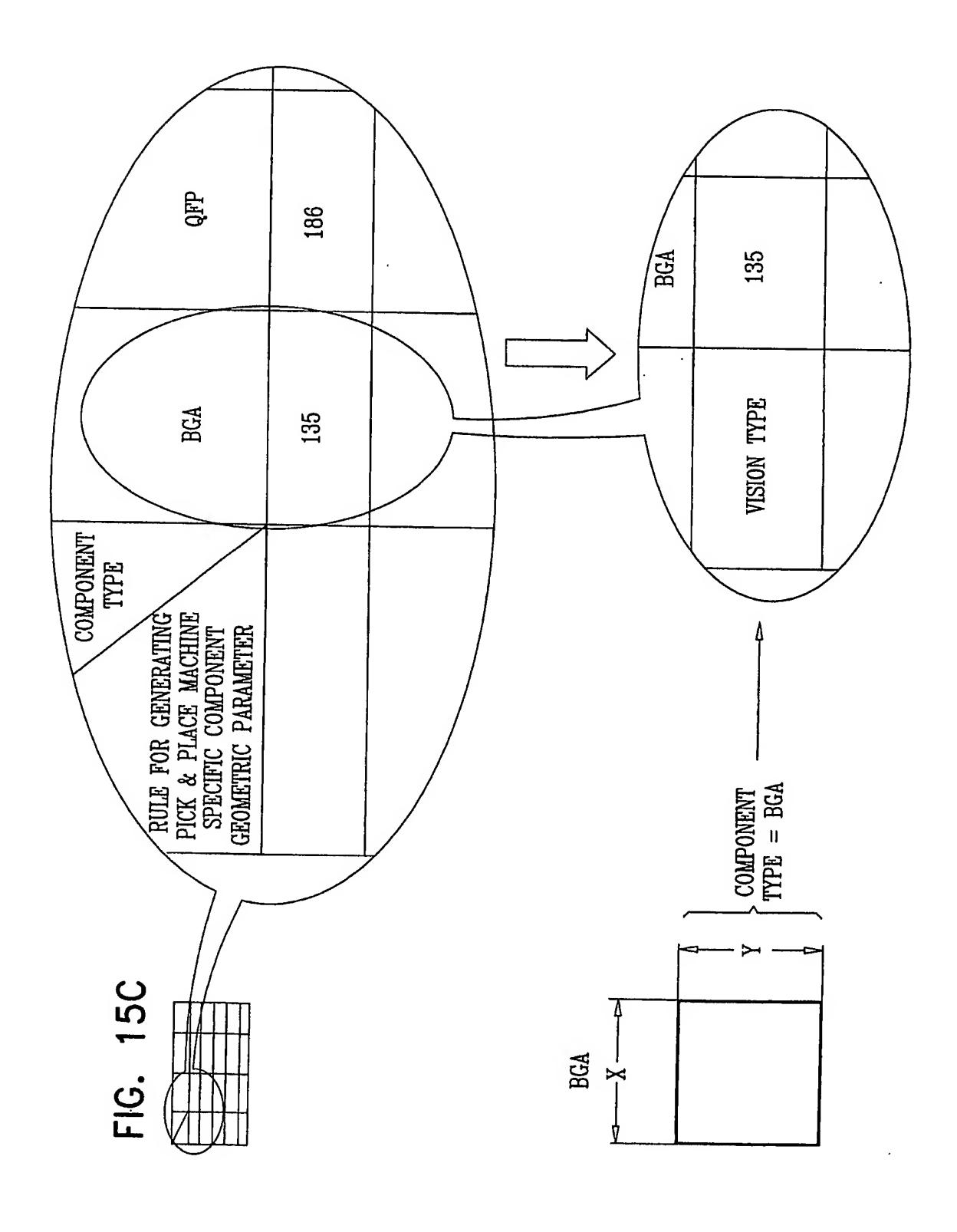
21/51

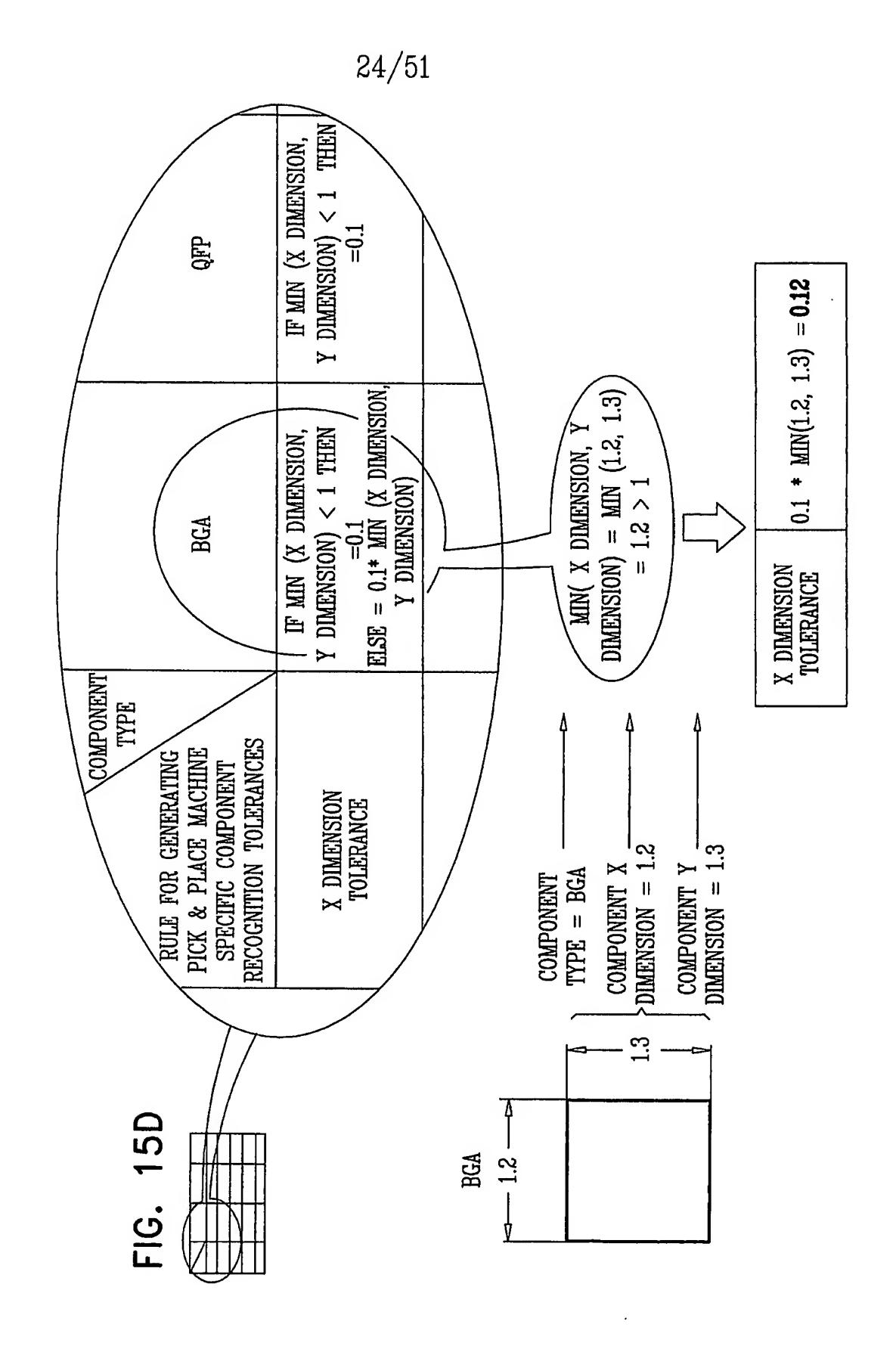


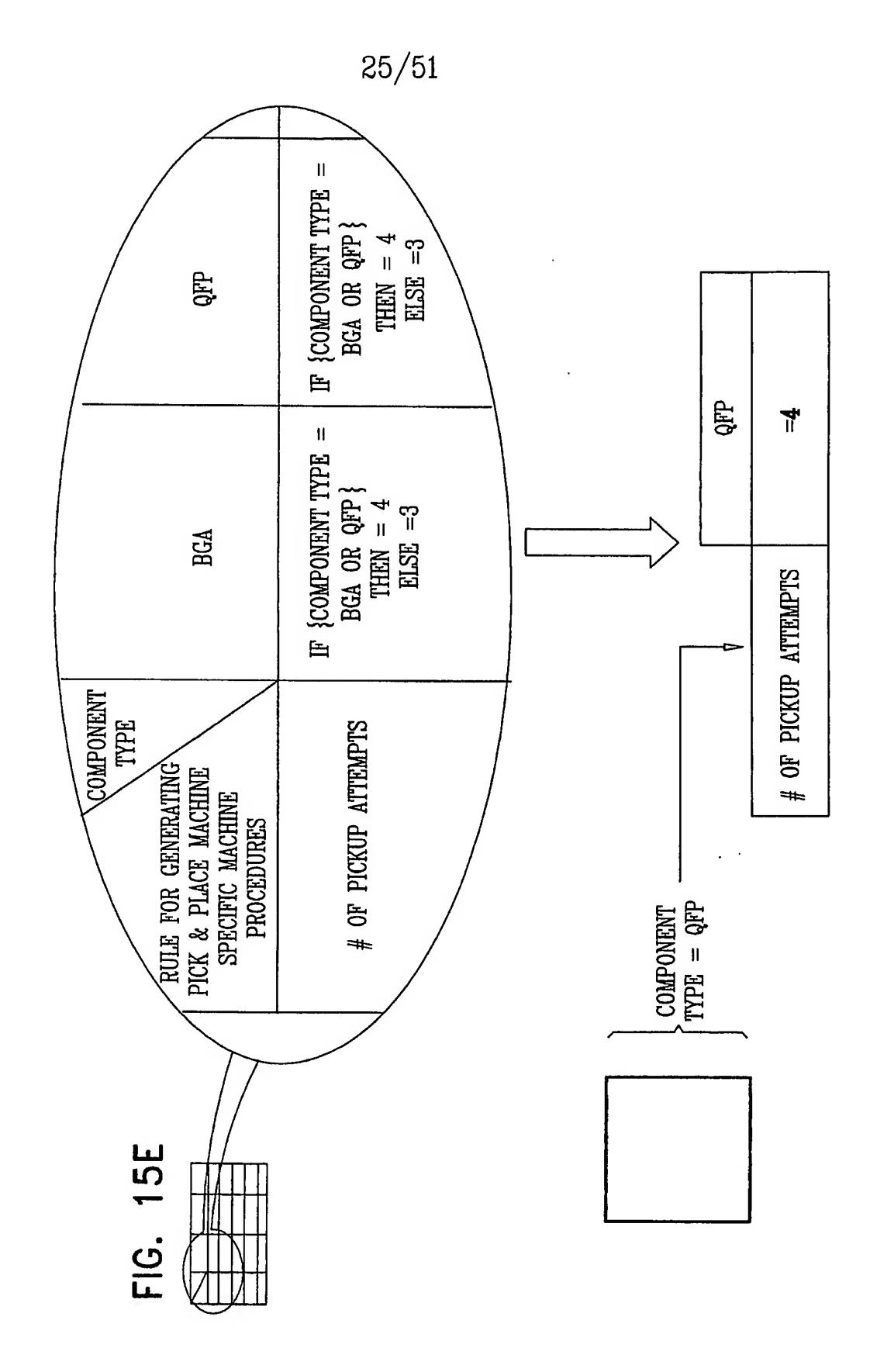
22/51



23/51







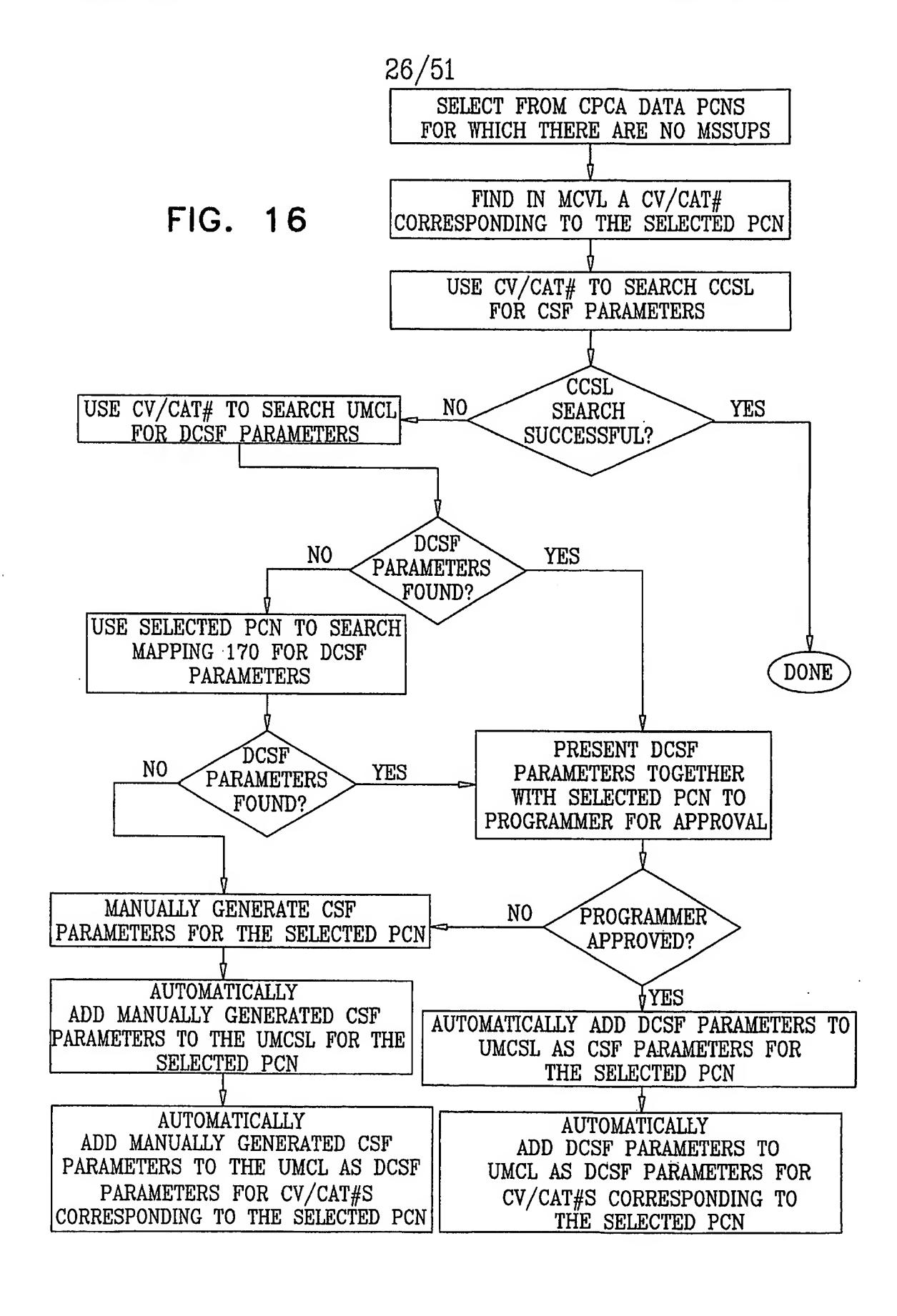
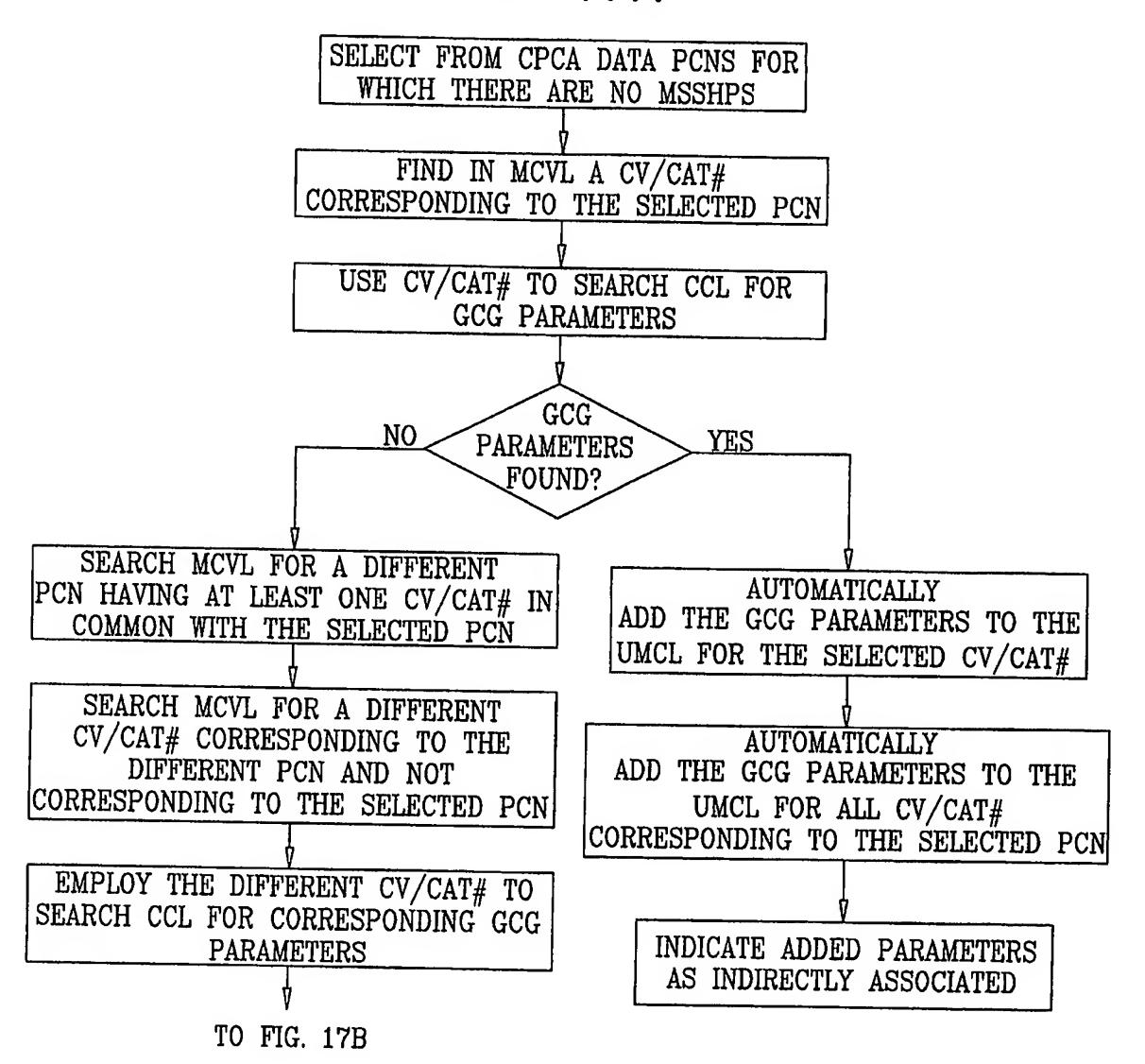
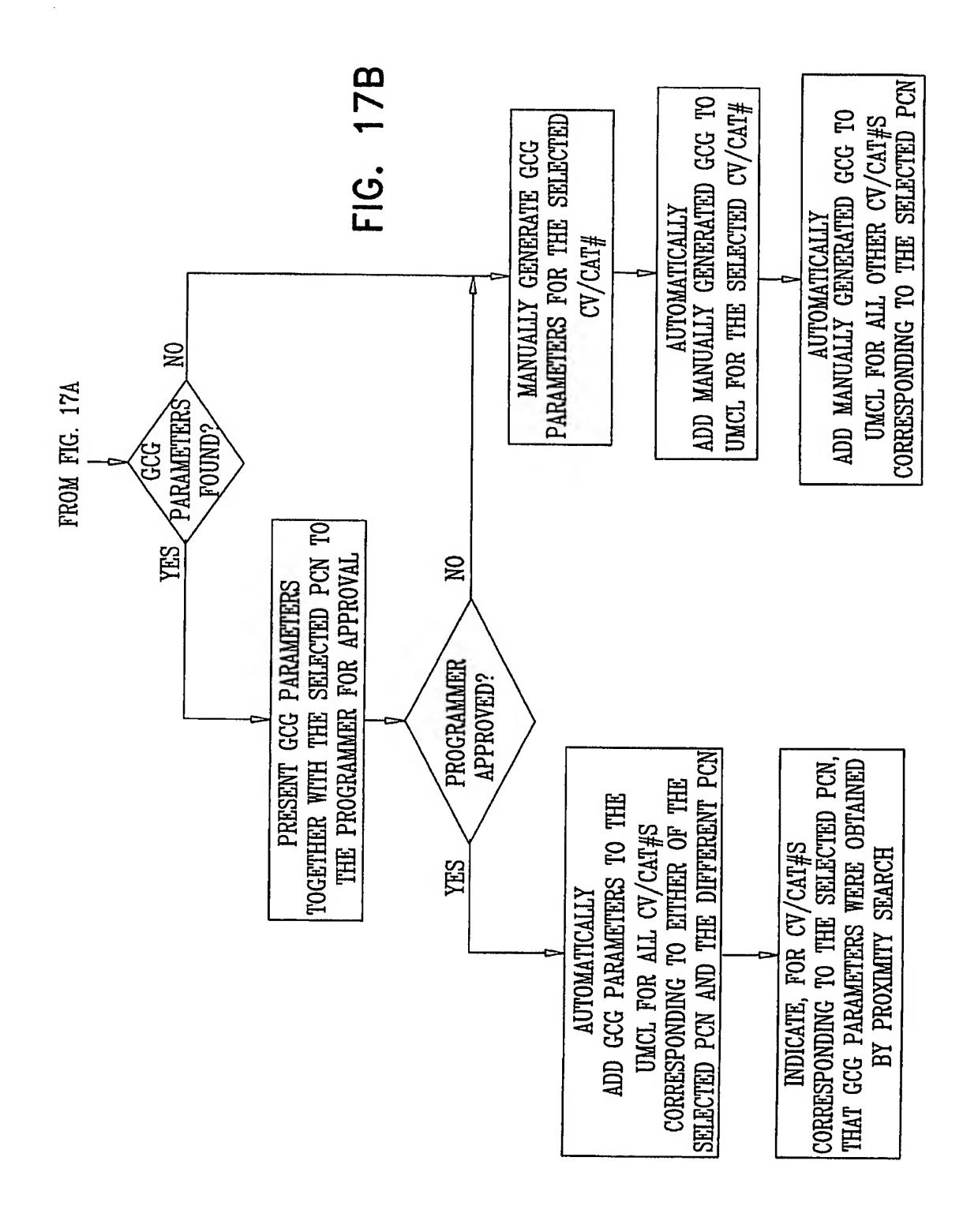
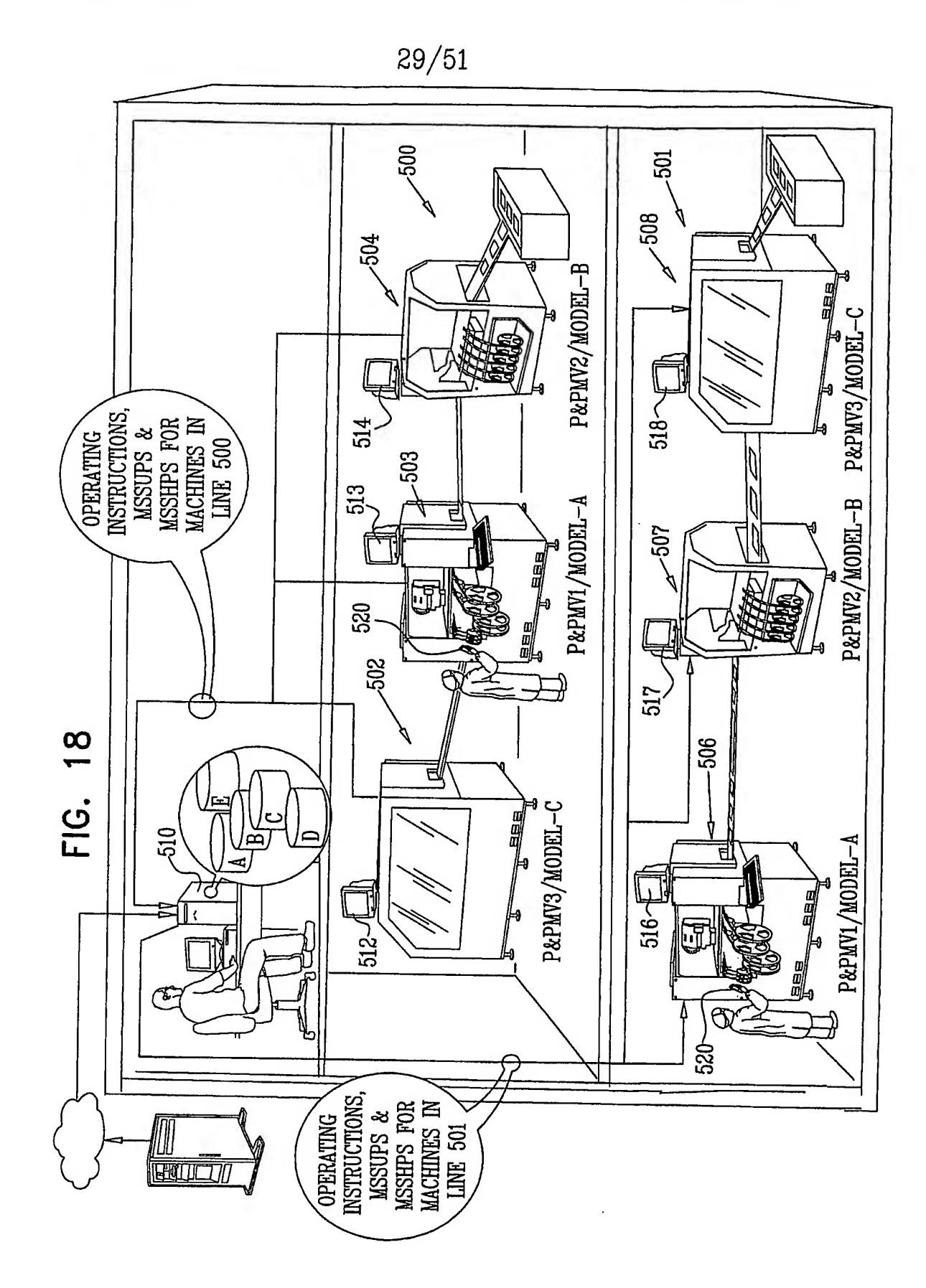


FIG. 17A

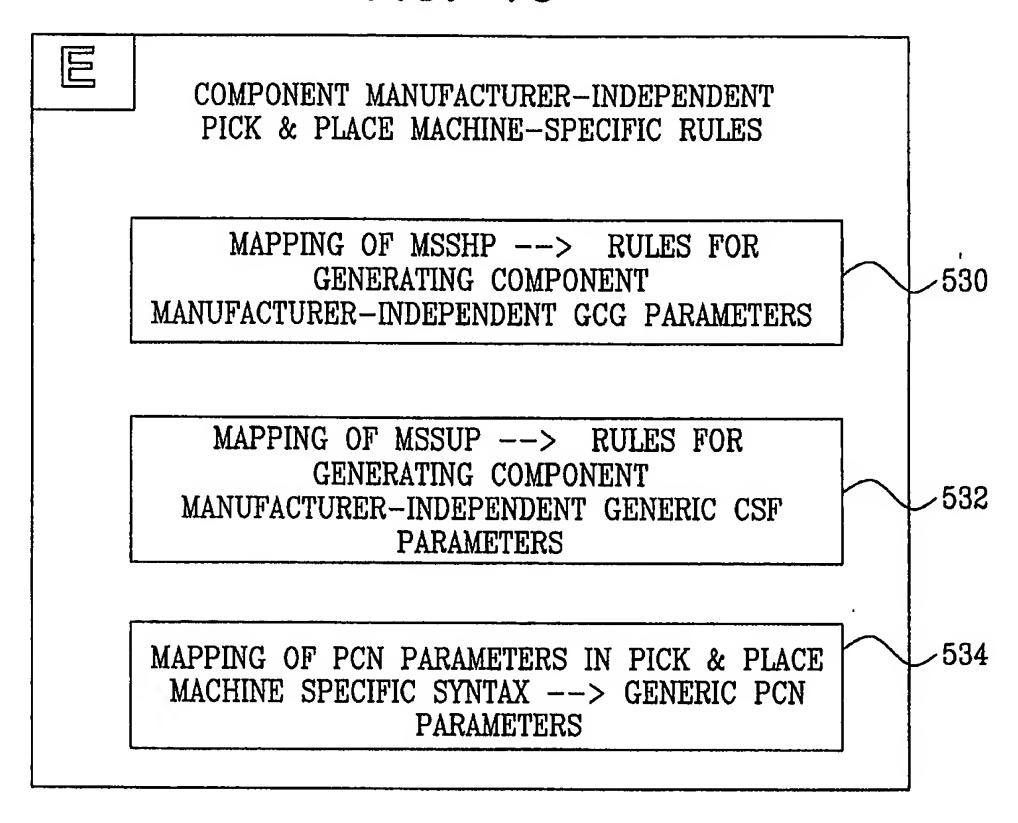


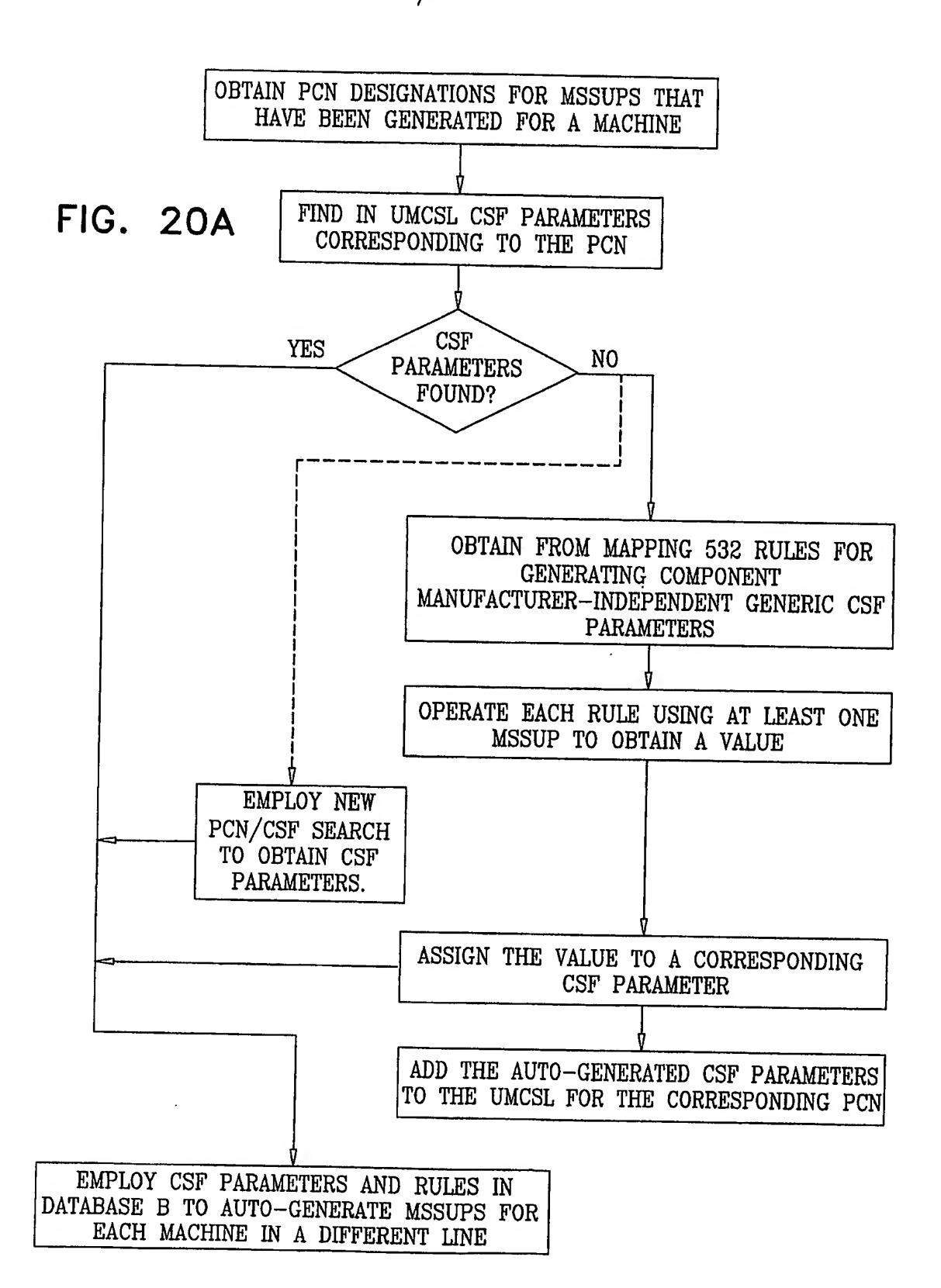




30/51

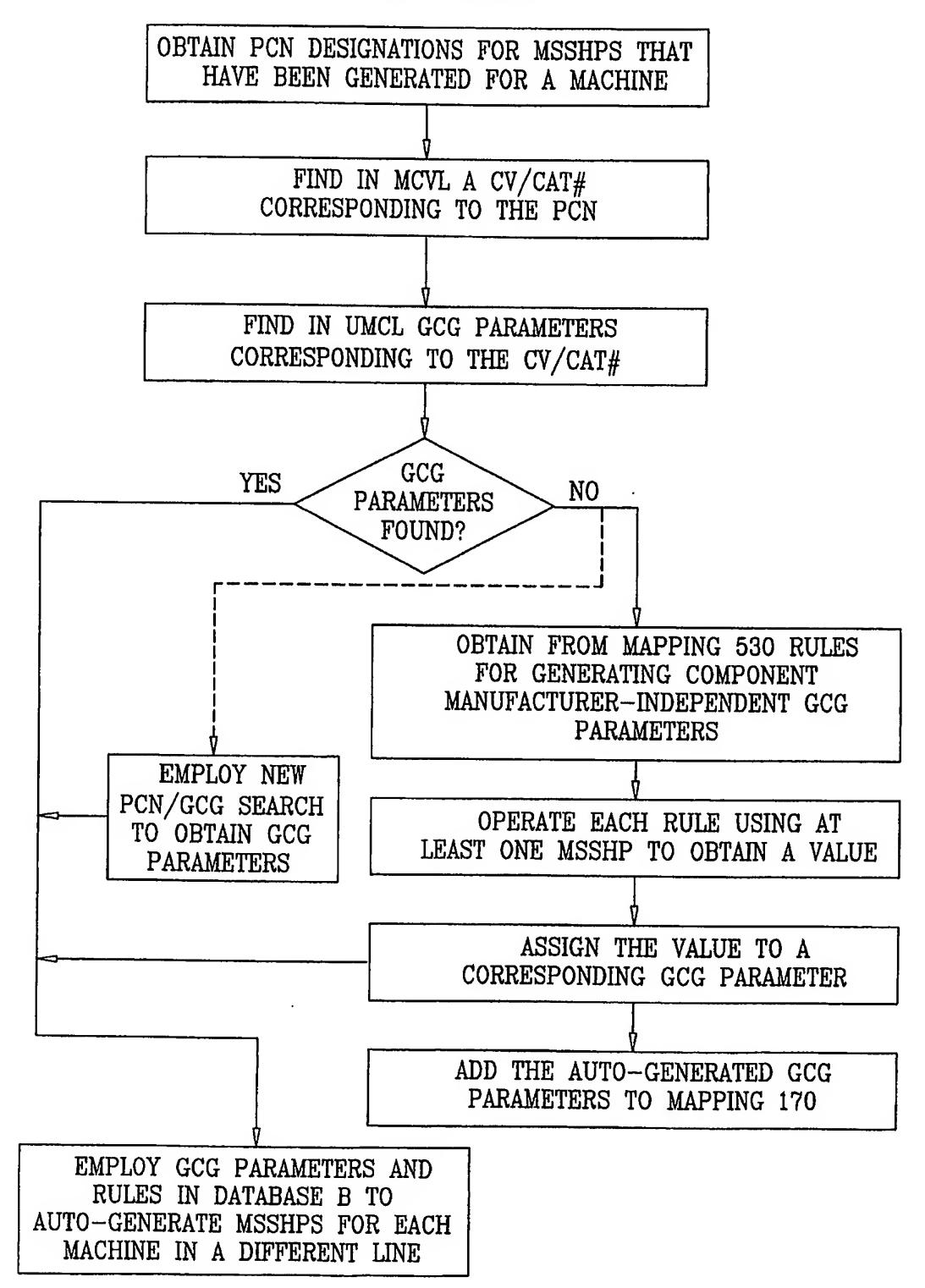
FIG. 19

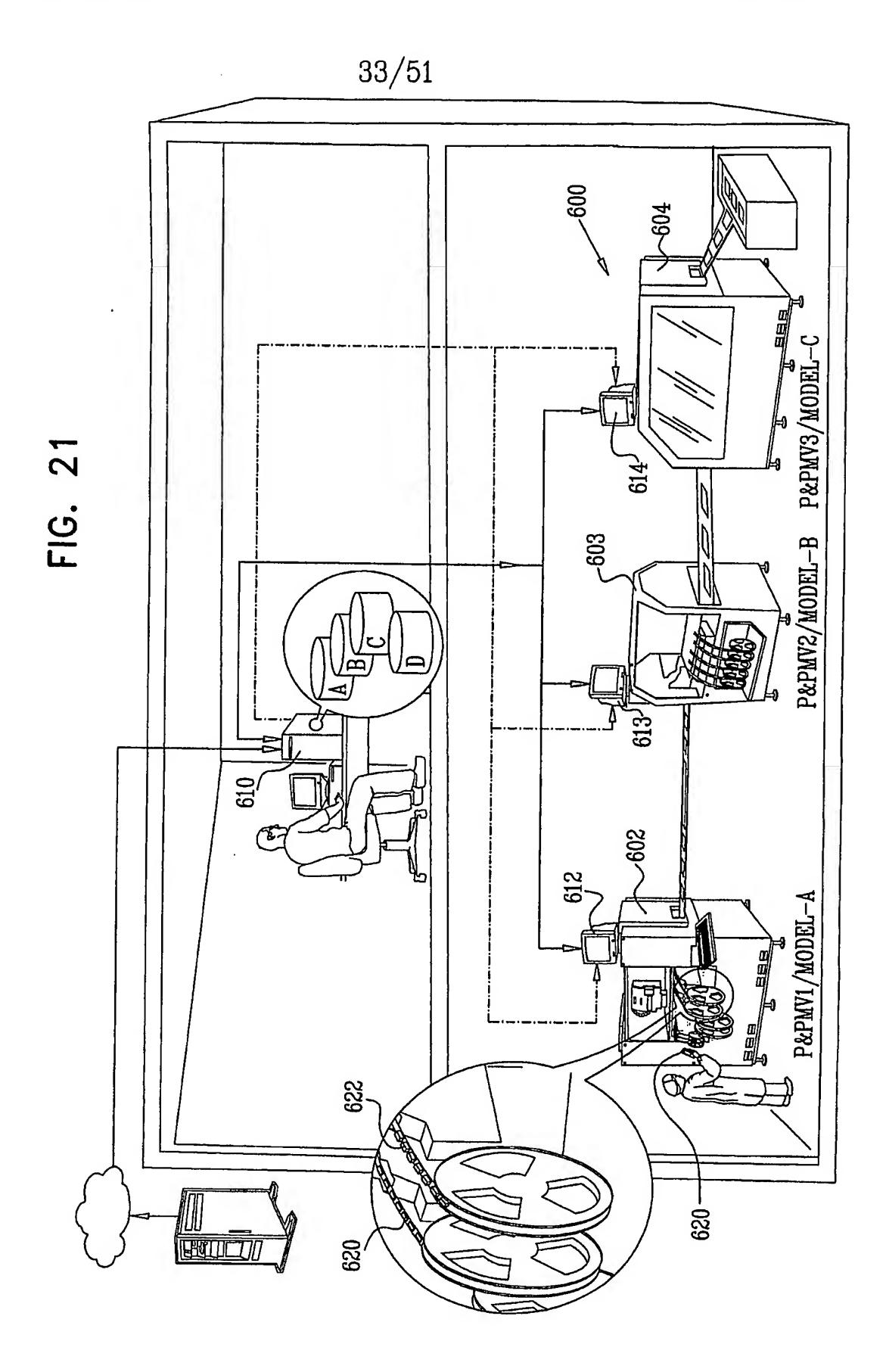


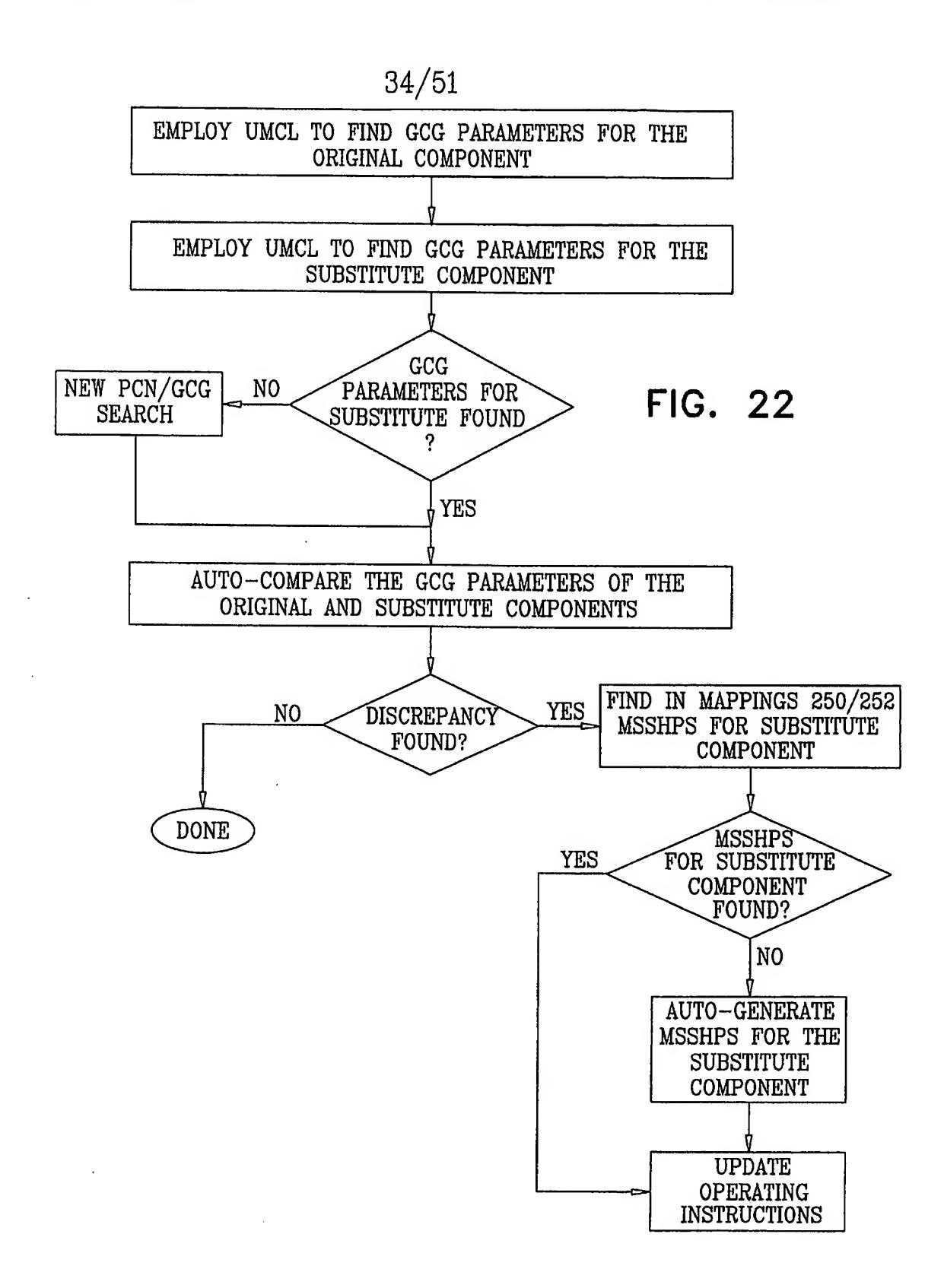


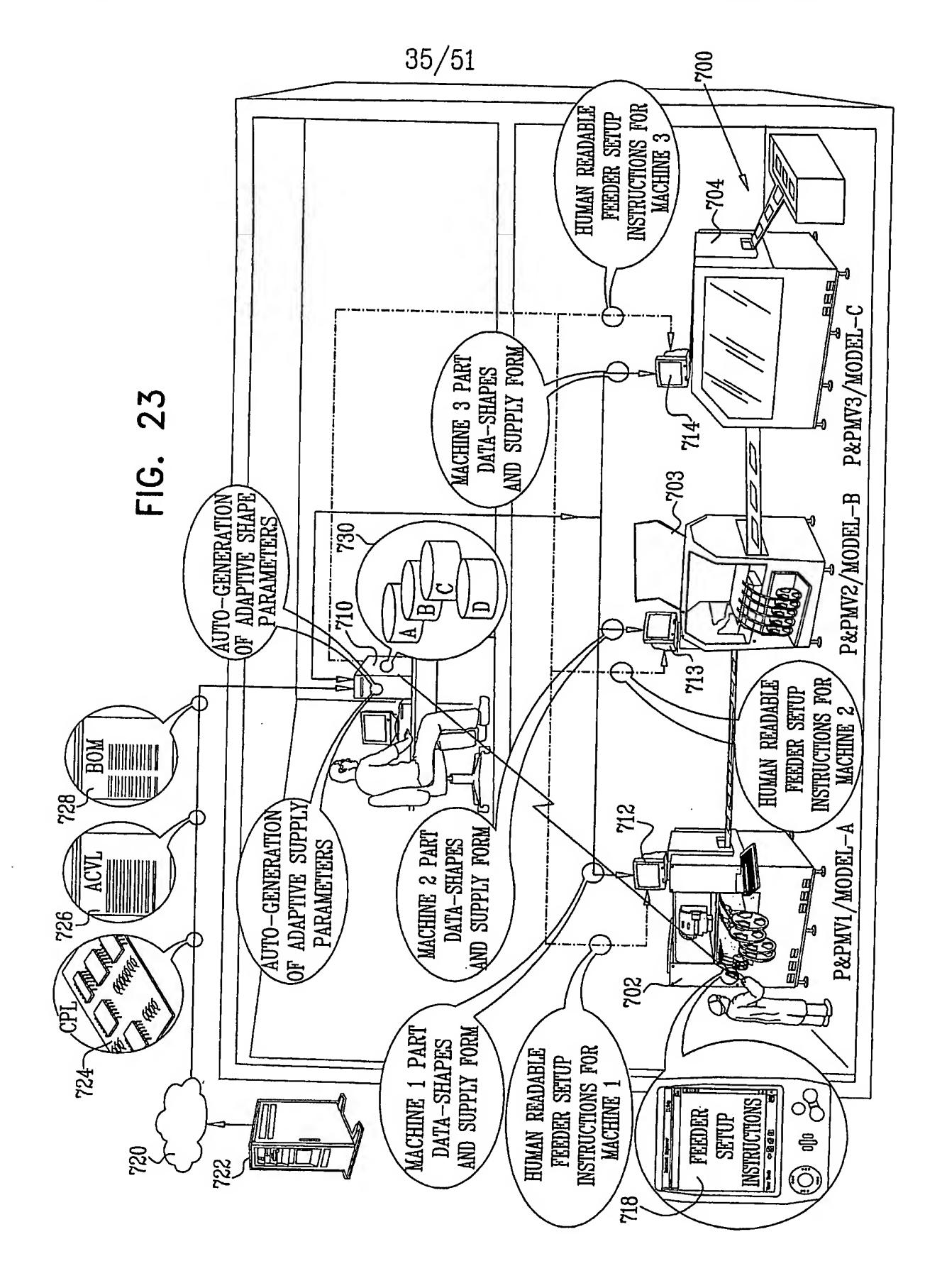
32/51

FIG. 20B



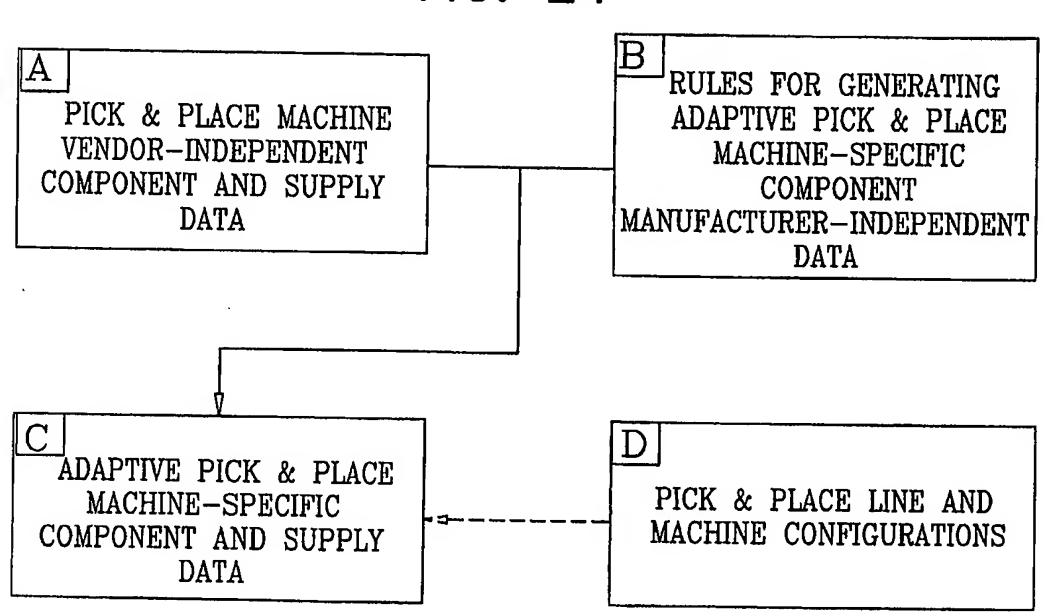


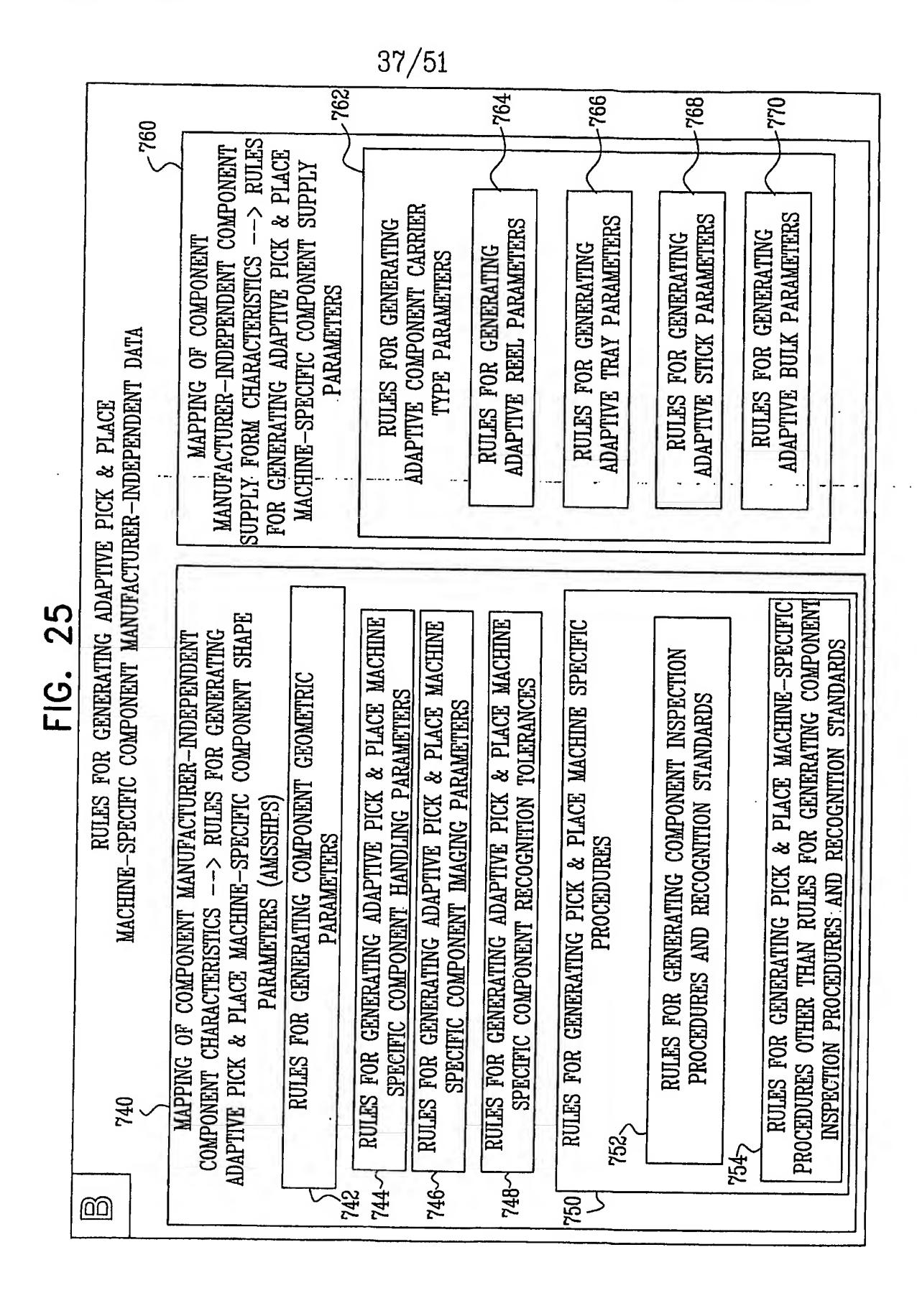




36/51

FIG. 24



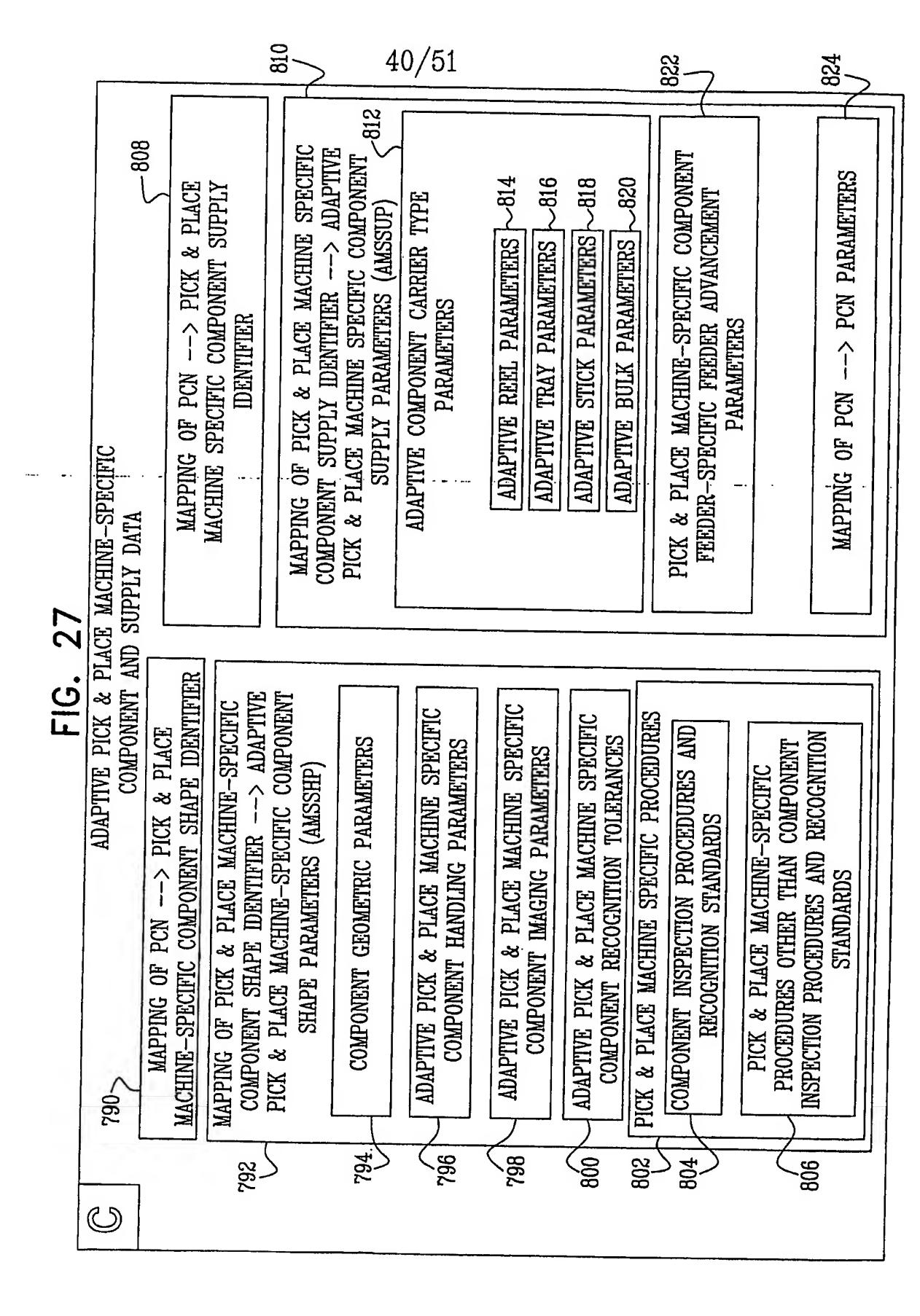


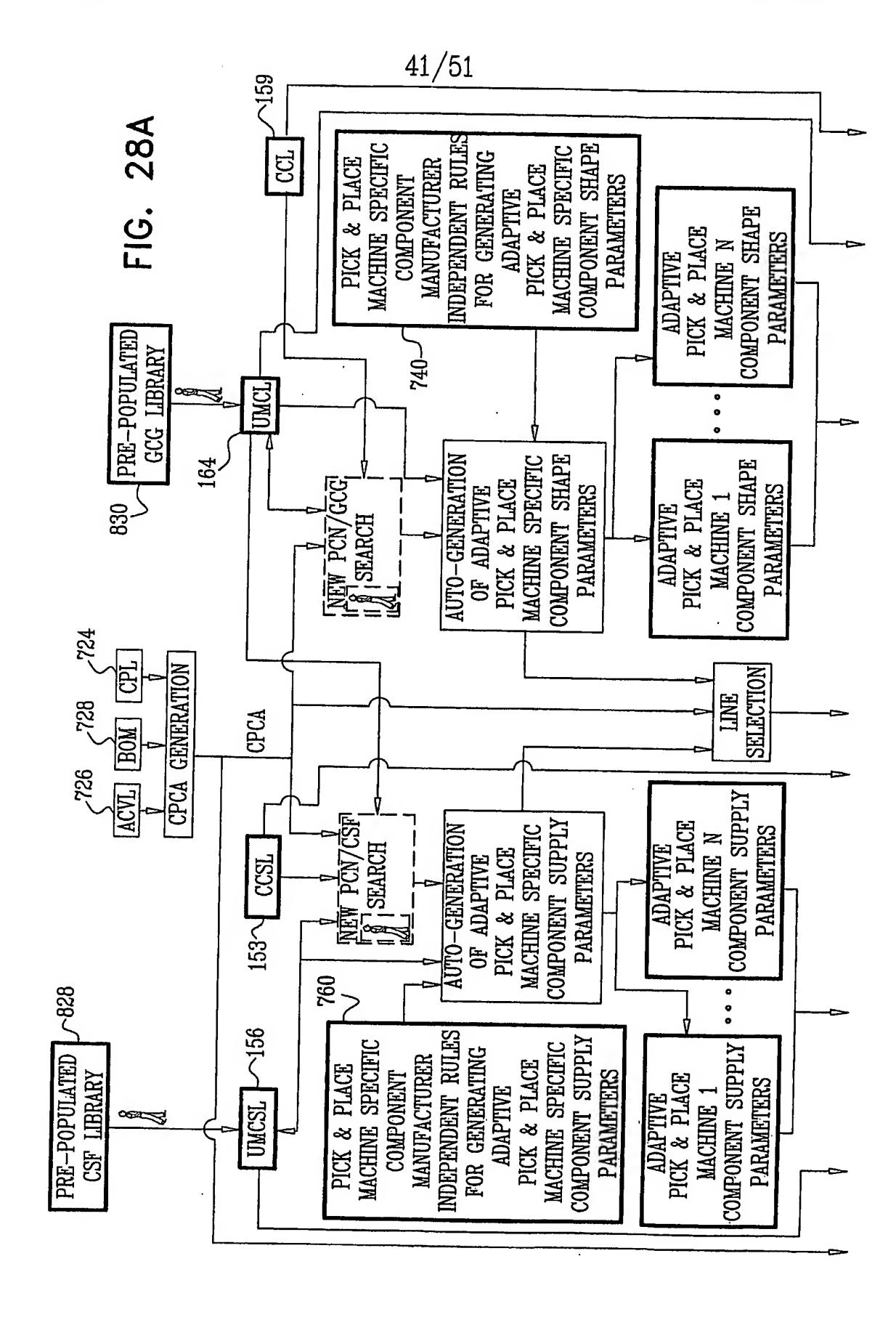
38/51
FIG. 26A

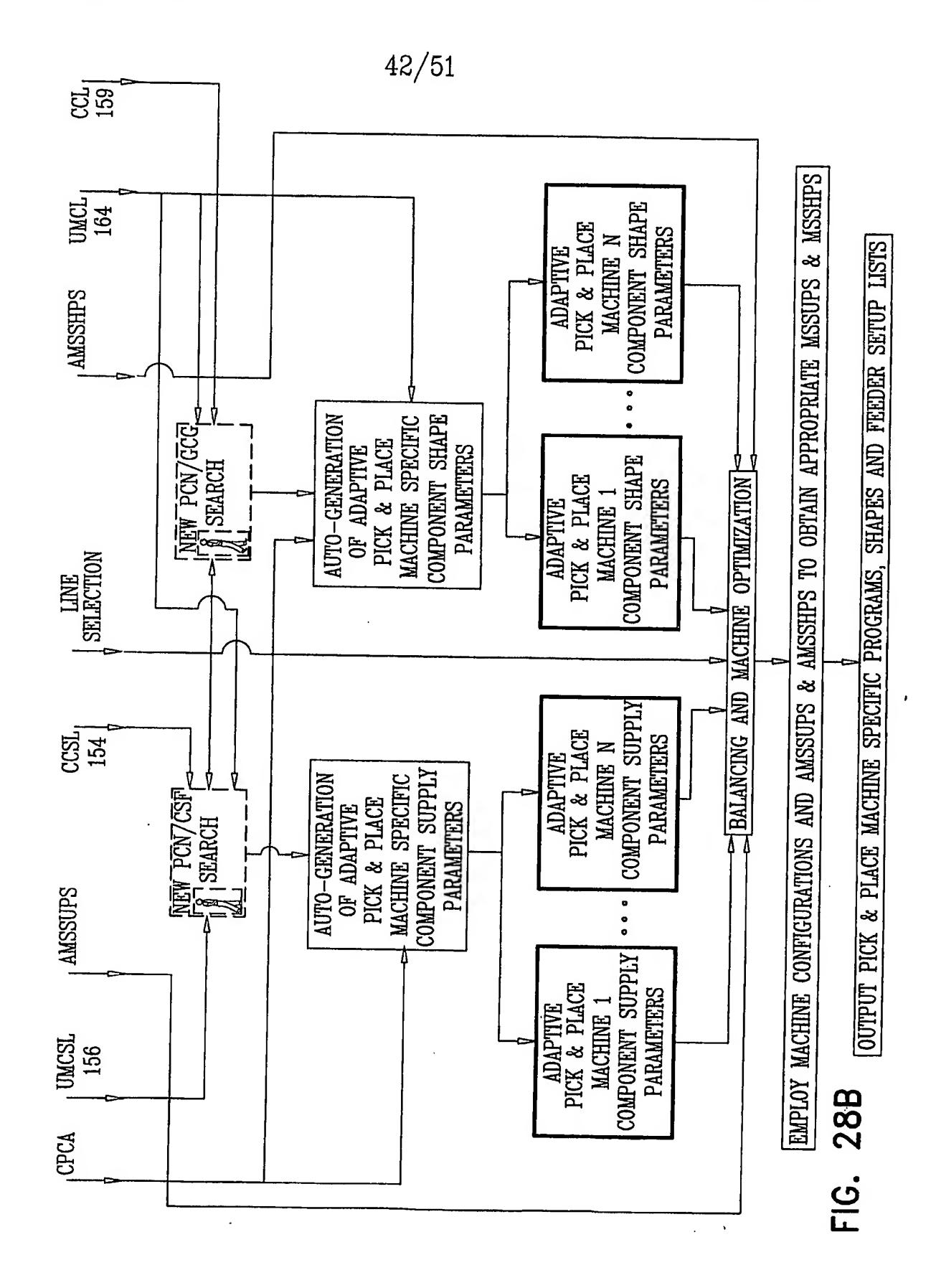
PICK & PLACE MACHINE SPECIFIC COMPONENT TRAY PARAMETER	RULES FOR GENERATING ADAPTIVE PICK & PLACE MACHINE SPECIFIC COMPONENT TRAY PARAMETER		
FEEDER NAME	TRAY LIFTER: IF { FRONT TRAY LIFTER} THEN = NAME A ELSE THEN-=NAME B	~ 772	•
•	•		
D	•		
•	•		

FIG. 26B

	39/51			
	CONNECTOR	286	THEN USE FRONTLIGHTING =120 FRONTLIGHTING =130 OR FRONTLIGHTING =130 OR	DACKLIGHTING =150
	· OFF	<784	FOR BACKLIGHTING: NOT RELEVANT FOR FRONTLIGHTING: =107	0 0 0
	BGA	<782	FOR BACKLIGHTING: IF {#LEADS > 100 {THEN NOT RELEVANT ELSE = 105 FOR FRONTLIGHTING: = 103	
THE TOWNS	ADAPTIVE MANUFACTURER-INDEPENDENT PICK & PLACE COMPONENT CHARACTERISTIC MACHINE SPECIFIC (COMPONENT TYPE) COMPONENT SHAPE	PARAMETER	VISION ALGORITHM	• • •







43/51

FIG. 29

SELECT FROM CPCA
DATA PCNS WHICH DO
NOT HAVE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SUPPLY
IDENTIFIERS AND/OR AMSSUP

EMPLOY GENERIC COMPONENT SUPPLY IDENTIFIERS IN SECOND STAGE MAPPING 158 TO OBTAIN CSF PARAMETERS FOR THE SELECTED PCN

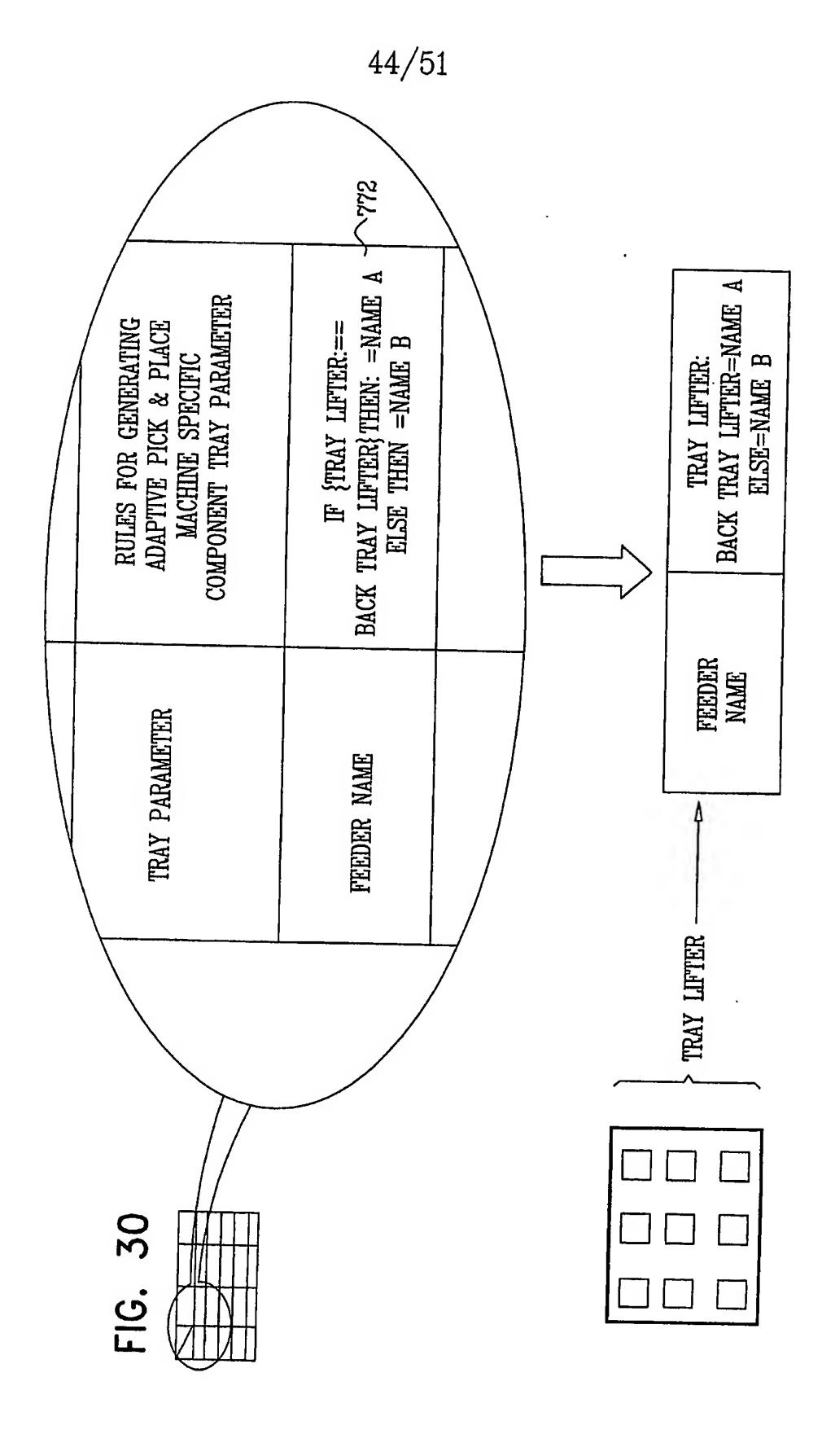
EMPLOY CSF
PARAMETERS TO
GENERATE PICK & PLACE
MACHINE—SPECIFIC
COMPONENT SUPPLY
IDENTIFIER FOR THE
SELECTED PCN

EMPLOY CSF PARAMETERS TO OBTAIN CARRIER TYPE FOR THE SELECTED PCN

EMPLOY CARRIER TYPE AND MACHINE IDENTIFICATION TO ACCESS APPROPRIATE RULE SET

OPERATE EACH RULE IN THE RULE SET BASED ON CSF PARAMETERS TO YIELD A PLURALITY OF VALUES

ASSIGN THE PLURALITY OF VALUES TO THE CORRESPONDING AMSSUP FOR CORRESPONDING MACHINE CONFIGURATIONS



45/51

SELECT FROM CPCA
DATA PCNS WHICH DO
NOT HAVE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SHAPE
IDENTIFIERS AND/OR AMSSHPS

FIG. 31

EMPLOY GENERIC
COMPONENT SHAPE
IDENTIFIERS IN SECOND
STAGE MAPPING 168 TO
OBTAIN GCG PARAMETERS
FOR THE SELECTED PCN

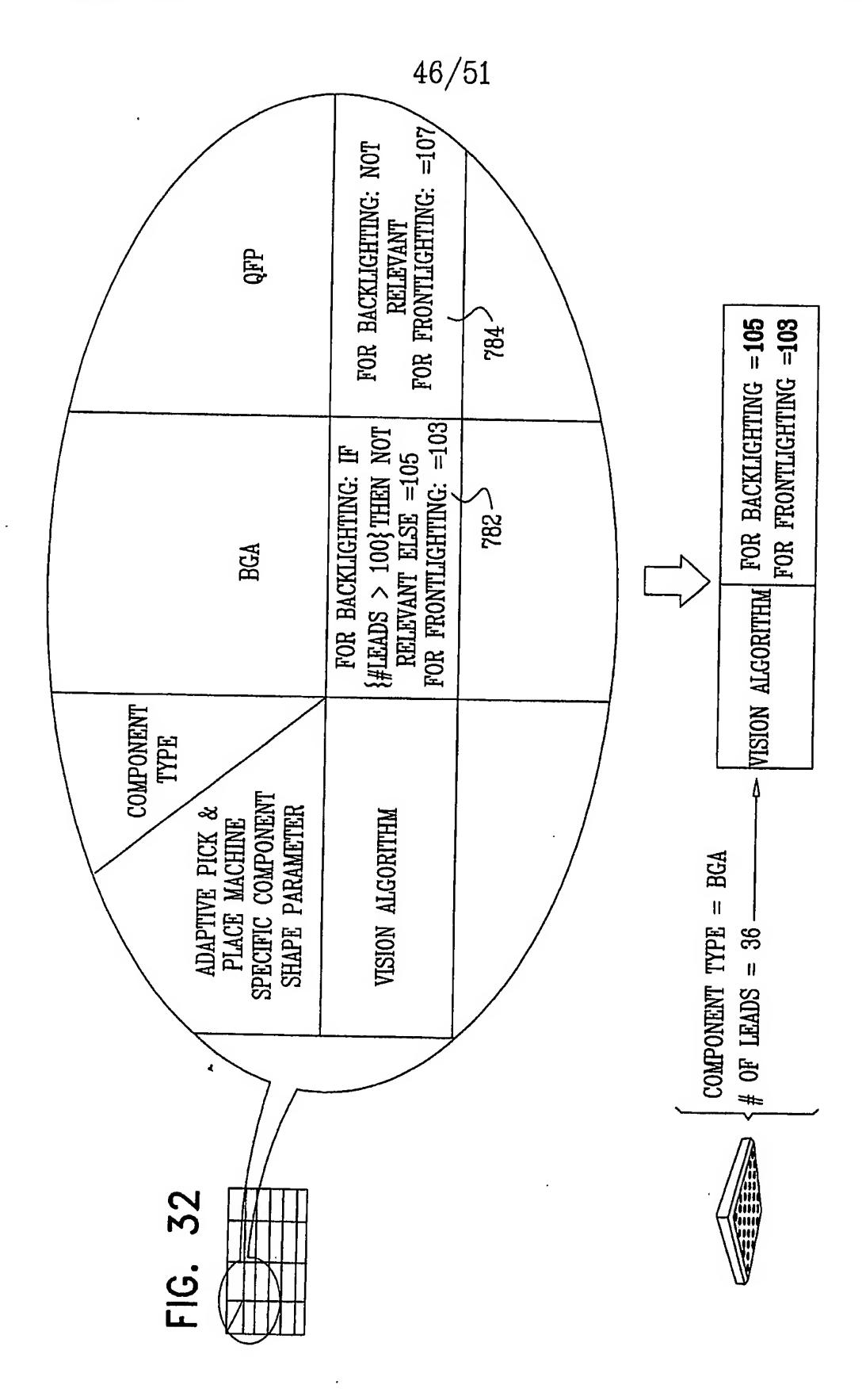
EMPLOY GCG
PARAMETERS TO
GENERATE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SHAPE
IDENTIFIER FOR THE
SELECTED PCN

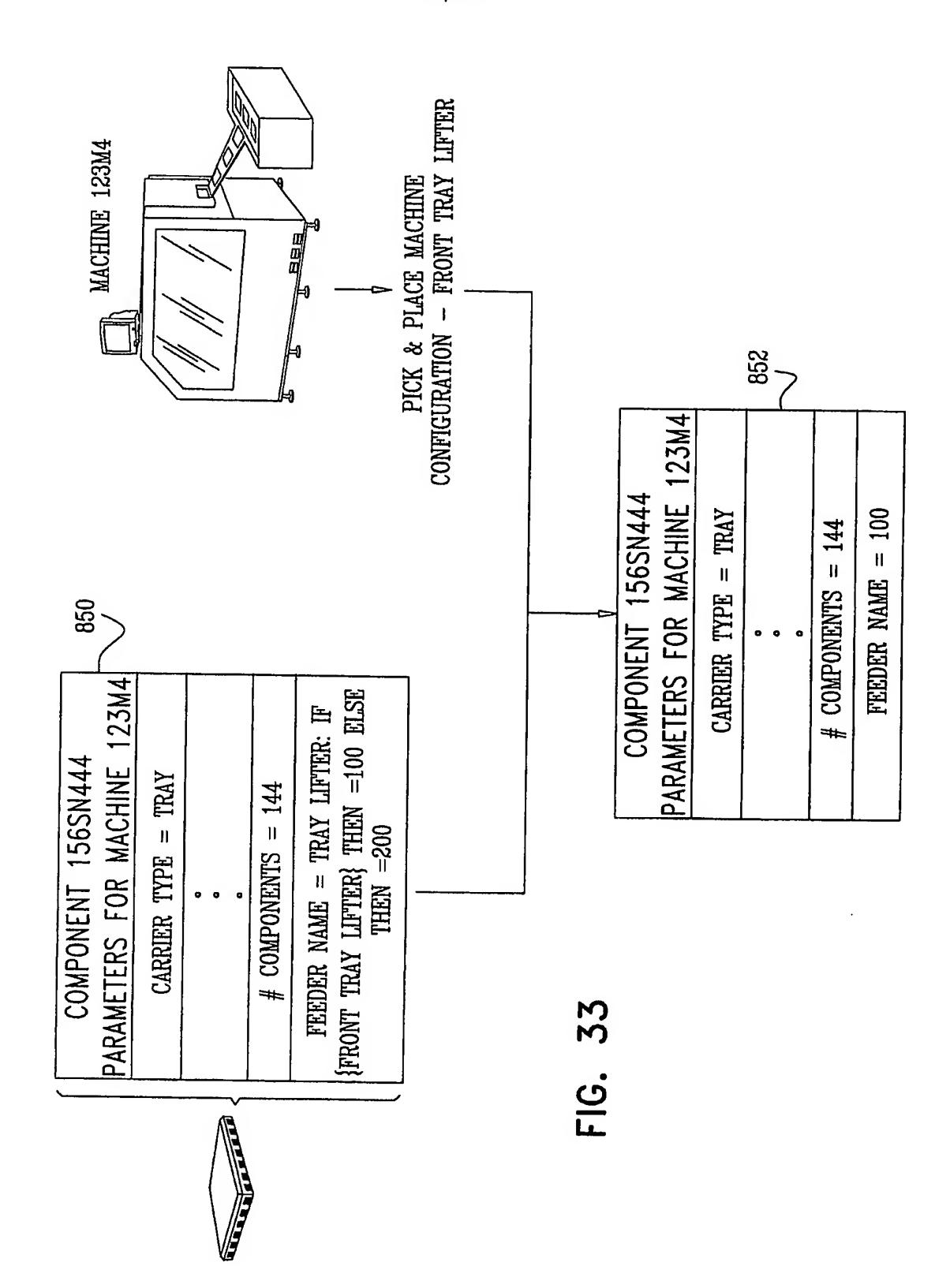
EMPLOY GCG PARAMETERS TO OBTAIN COMPONENT TYPE FOR THE SELECTED PCN

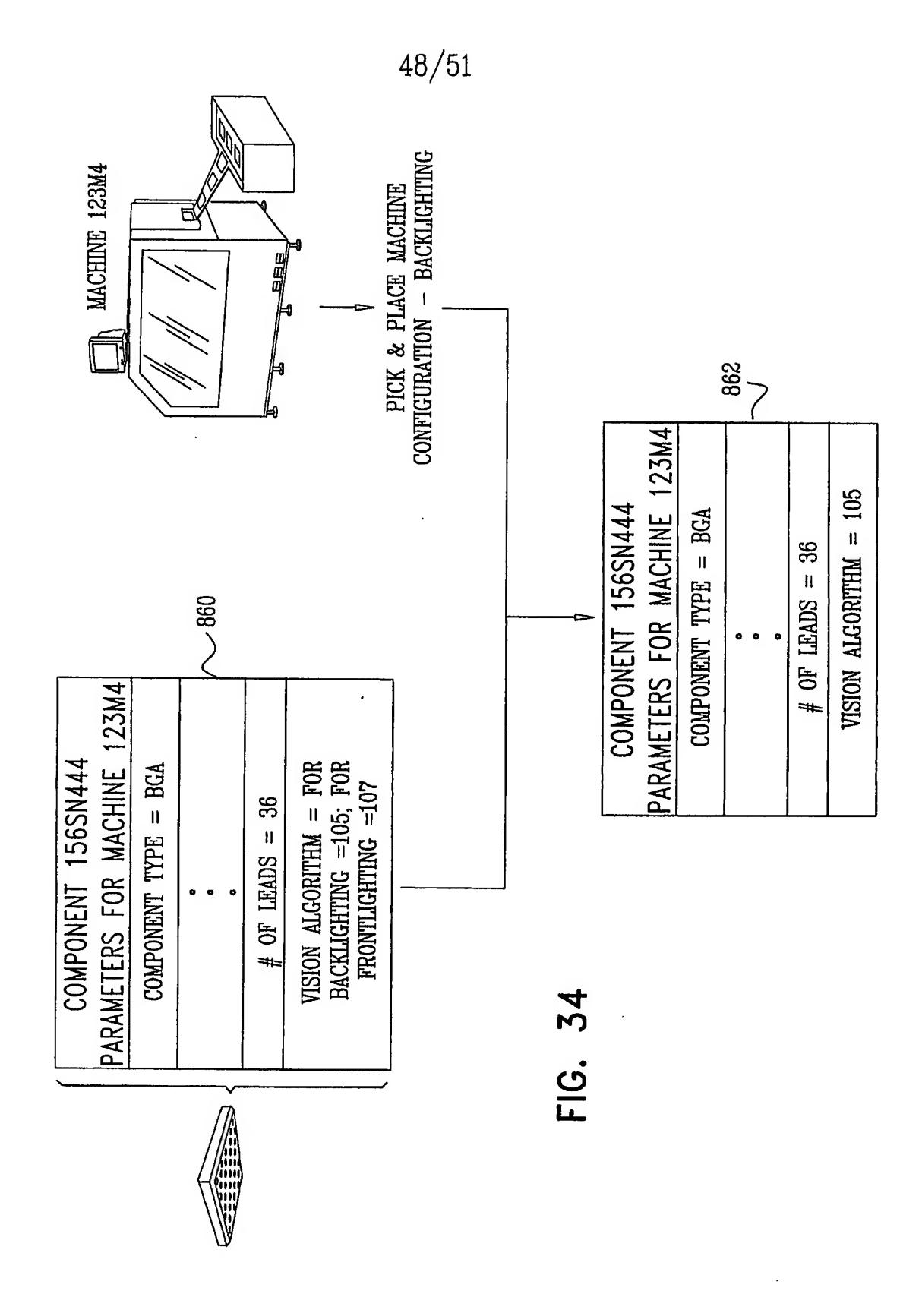
EMPLOY COMPONENT TYPE AND MACHINE IDENTIFICATION TO ACCESS APPROPRIATE RULE SET

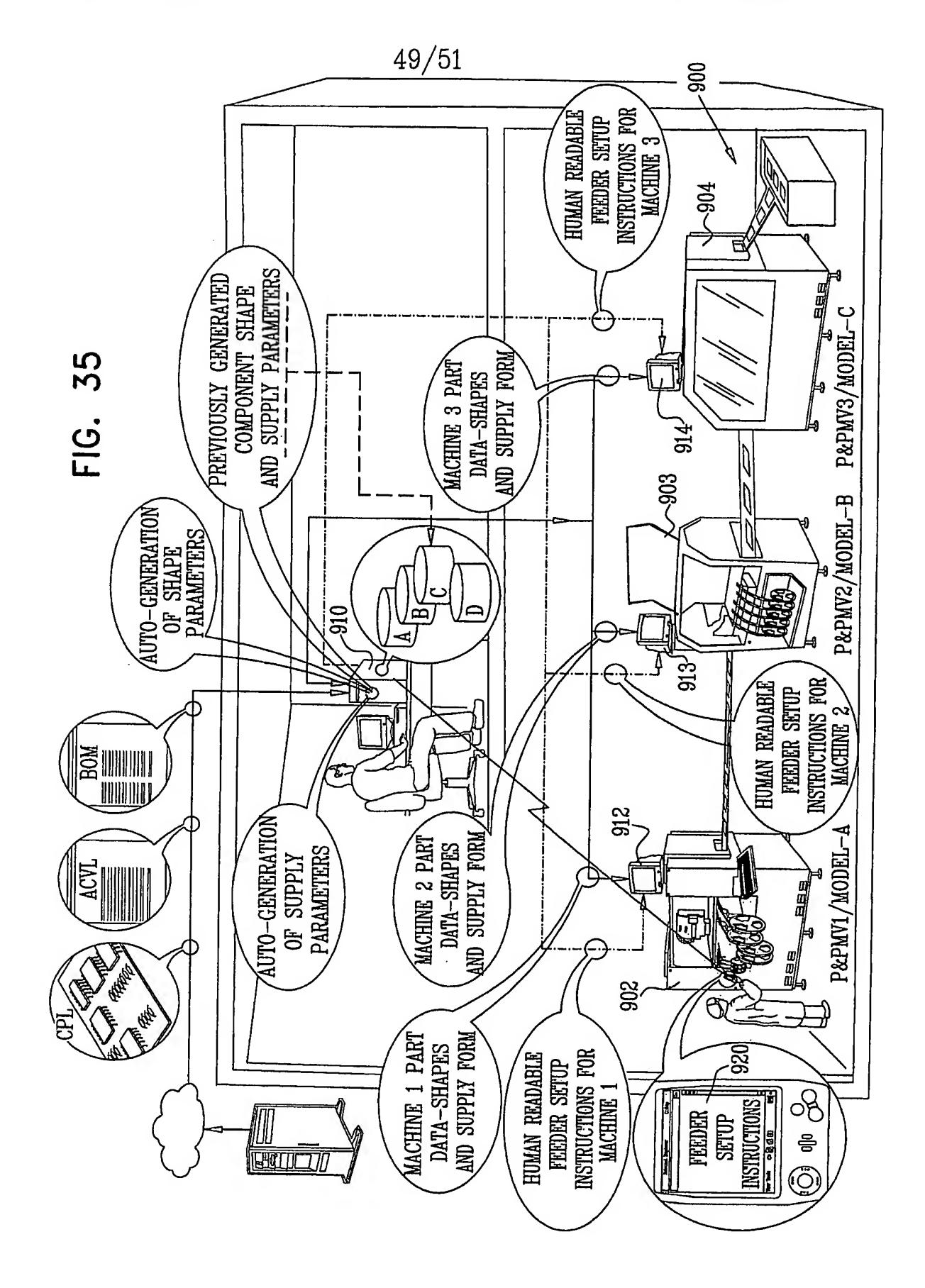
OPERATE EACH RELEVANT RULE IN THE RULE SET BASED ON GCG PARAMETERS TO YIELD A PLURALITY OF VALUES

ASSIGN THE PLURALITY OF VALUES TO THE CORRESPONDING AMSSHP FOR VARIOUS CORRESPONDING MACHINE CONFIGURATIONS









50/51

FIG. 36

SELECT FROM CPCA
DATA PCNS WHICH DO
NOT HAVE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SUPPLY
IDENTIFIERS AND/OR MSSUPS
AUTO-GENERATED BY
SOFTWARE OF THE
PRESENT INVENTION

EMPLOY GENERIC
COMPONENT SUPPLY
IDENTIFIERS IN SECOND
STAGE MAPPING 158 TO
OBTAIN CSF PARAMETERS
FOR THE SELECTED PCN

EMPLOY CSF
PARAMETERS TO
GENERATE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SUPPLY
IDENTIFIER FOR THE
SELECTED PCN

EMPLOY CSF PARAMETERS TO OBTAIN CARRIER TYPE FOR THE SELECTED PCN

EMPLOY CARRIER TYPE AND MACHINE IDENTIFICATION TO ACCESS APPROPRIATE RULE SET

OPERATE EACH RULE IN THE RULE SET BASED ON CSF PARAMETERS TO YIELD A VALUE

ASSIGN THE VALUE TO THE CORRESPONDING MSSUP

51/51

FIG. 37

SELECT FROM CPCA
DATA PCNS WHICH DO
NOT HAVE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SHAPE
IDENTIFIERS AND/OR MSSHPS
AUTO-GENERATED BY
THE SOFTWARE OF THE
PRESENT INVENTION

EMPLOY GENERIC
COMPONENT SHAPE
IDENTIFIERS IN SECOND
STAGE MAPPING 168 TO
OBTAIN GCG PARAMETERS
FOR THE SELECTED PCN

EMPLOY GCG
PARAMETERS TO
GENERATE PICK & PLACE
MACHINE-SPECIFIC
COMPONENT SHAPE
IDENTIFIER FOR THE
SELECTED PCN

EMPLOY GCG PARAMETERS TO OBTAIN COMPONENT TYPE FOR THE SELECTED PCN

EMPLOY COMPONENT TYPE AND MACHINE IDENTIFICATION TO ACCESS APPROPRIATE RULE SET

OPERATE EACH RELEVANT RULE IN THE RULE SET BASED ON GCG PARAMETERS TO YIELD A VALUE

ASSIGN THE VALUE TO THE CORRESPONDING MSSHP